IMPORTANT

Before you remove the Wire-Seal, check the contents of this envelope with the listing on the front of the envelope. If any part is missing, your Howard W. Sams distributor will replace the entire PHOTOFACT set IF the Wire-Seal has not been damaged.

This PHOTOFACT Folder Set is

WIRE-SEALED FOR YOUR PROTECTION

to guarantee completeness of contents

DO NOT ACCEPT IF SEAL HAS BEEN BROKEN

TO OPEN ***JUST DO THIS:***

1

Take hold of the Set with both hands. Place your thumbs directly under the top wire-seal; then, divide the contents equally by putting your thumbs midway through the thickness of the Set. Now, pull the two sections apart at the top, firmly.

2

Repeat this process, pulling close to the wire-seal at the bottom, so that the set is now divided into two equal parts.

3

Continue this "pulling-apart" process with the section in which the wire-seals remain, dividing it in half.

4

Finally, remove the wire-seals left in the last section; this can easily be done with your fingernail or any sharp instrument.

Your "Safety-Sealed" PHOTOFACT Set is now ready for profit-making use . . .

IMPORTANT

Before you remove the Wire-Seal, check the contents of this envelope with the listing on the front of the envelope. If any part is missing, your Howard W. Sams distributor will replace the entire PHOTOFACT set IF the Wire-Seal has not been damaged.

PHOTOFACT® Folder

INDEX

A cumulative index is included as a part of this Folder. Upon finding that a new tube is not listed on the roll chart of a tester covered in this service, refer to the latest Tube Tester Data Index to determine in which PHOTOFACT Set the data was published. If listed, reference to that Folder will provide the necessary data.

TUBE TYPES	JACKSON 598, 648, and 658	TUBE TYPES	JACKSON 598, 648, and 658	TUBE TYPES	JACKSON 598, 648, and 658
1H2	500	6FE5	500	14GT8	500
1N2	500	6FE8	500	15EW6	508
2ES5	500	6FG5	500	17EW8	508
3DG4	500	6FV8	504	22DE4	500
6CW7	504	6FW8	500	34GD5	508
6EH7	500	6FY5	508	35GL6	500
6EJ7	500	6GM6	500	50BM8	504
6EM7	500	6GY8	504	50FE5	500
6EU7	500	7DJ8	504	7167	508
6EV5	500	9EF6	508	7408	500
6EV7	504	10EW7	504	7543	500
6EW7	504	12DW7	504	7591	504

JACKSON MODEL 598

SET 508

SUPPLEMENTS LATEST ROLL CHART 598-2

Tube Type	A.	B.	C.	Fil. Cont.	D.	E.	F.	G.
6FY5	6.3	3YZ		4	5	2		50
9EF6	9.4	2Y		7	3	5	4	21
15EW6	15.	3Y		4	5		6	60
17EW8	17.	4		5	1	2Z		55
		4			6	7Z		55
34GD5	35.	3Z	2	4	7	5	6	33
7167	Set line to 80% mark							
	12.6	3YZ		4	5	1	6	32

JACKSON MODEL 648

SET 508

SUPPLEMENTS LATEST ROLL CHART 648-23C

Tube Type	Fil.	D.	E.	Plate Test
6FY5	6.3	A123	A57	17 XZ
9EF6	9.4	123	456	26 W
15EW6	15.	AC1234	567*	45 XZ
17EW8	17.	123	A45	15 XZ
		127	A89	15 XZ
34GD5	35.	C123	467	55 VW
7167	Set line to 80% mark			
	12.6	A234	AC156	16 YZ

JACKSON MODEL 658

SET 508

SUPPLEMENTS LATEST ROLL CHART 658-3

Tube Type	Sec.	Circuit Heater	H-K	P-G	Plate	Grid Test	Heater Current	
6FY5	T	6.4J	123	a57	17R	10WY•		
9EF6	P	10.6F	123	456	21Q	80VY•	A18.6L	Z600
15EW6	P	18.6D	1247	ac356	60S	10WY•		
17EW8	T	18.6L	123	a45	19Q	20WY•		
	T	"	127	a89	"	20WY•		
34GD5	P	38.E	123	467	35R	70VY•		
7167	T	13.6J	124	ac356	46S	10WY•		

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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The PHOTOFACT® Servicer

SET 508 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ NOV. 1960

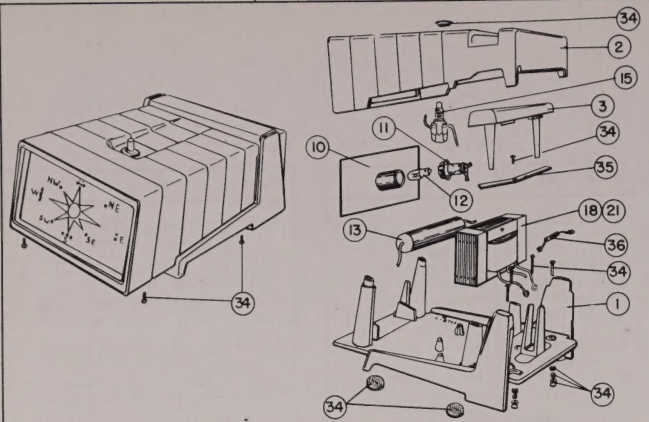
CONTENTS PHOTOFACT SET 508

TRADE NAME AND MODEL	SET AND FOLDER NO.
TELEVISION RECEIVERS	
MAGNAVOX	
Chassis U30-15-11, -12, U30-20-11, U30-21-11, U30-22-11, U30-23-11, V30-15-11, -12, V30-16-11, -12, V30-17-11, -12, V30-20-11, V30-21-11, V30-22-11, V30-23-11, V30-24-11	508-1
OLYMPIC	
CRW212B, M, TRW203B, M (Ch. JRW)	508-2
PRODUCTION CHANGE BULLETIN 248	
KNIGHT Tuner	
KN-141	508-3
SILVERTONE TV Amp.	
Chassis 456.59592, 528.59592	508-3
WESTINGHOUSE Amp.	
H-57ACS1, H-57ACS2 (Ch. V-2507-3)	508-3
OTHER EQUIPMENT	
ARKAY	
FM-8	508-4
ARVIN	
60R23, 60R28, 60R29 (Ch. 1.49201)	508-5
CAPITOL	
936	508-6
CORONADO	
RA48-8357A, B	508-7
DECCA	
DP-546, DP-584, DP-586, DPS-20	508-8
DP-548	508-9
DE WALD	
N-2200	508-10
GENERAL ELECTRIC	
P790A, B, P791A, B	508-11
KARMANN GHIA	
Model 0BG	508-12
VOLKSWAGEN	
Models 0BT, 0BV	508-12
MAGNAVOX	
Chassis 80-01-00, 80-02-00	508-13
MOTOROLA	
310X, 311X	508-14
NORELCO	
B3X88U/70, B3X88U/71, B3X88U/72	508-15
OLYMPIC CONTINENTAL	
GBS388	508-16
RCA VICTOR	
AP-1 (Record Changer)	508-17
BK-1, DK-109, DK-110, DK-111 (Ch. RS-187)	508-18
SYLVANIA	
45C13, 45C14 Series (Ch. 1-647-1)	508-19

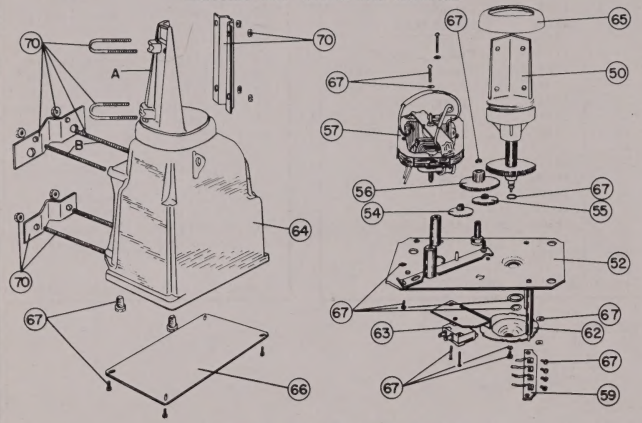
This Servicer provides you with essential data on other models or special equipment not covered in standard PHOTOFACT folders. The schematics and supplementary data included here will be of valuable help to you in servicing this equipment.

IN THIS ISSUE OF THE SERVICER:

Channel Master
Model 9523



"ELECTRIC EYE" INDICATING CONTROL



"ELECTRIC EYE" INDICATING DRIVE

CHANNEL MASTER MODEL 9523

GENERAL SERVICING INFORMATION

When the primary switch is turned on, power is applied to the transformer and the indicating lamp glows. When the directional switch is pressed, rotation is obtained and the indicator lamp flashes a coded signal by bright flashes. The speed of rotation is one R.P.M.

The indicating circuit consists of a cam operated switch connected to a lamp. The motor is a 30 volt capacitor run induction motor.

The control unit is housed in a two color housing provided with receptacles for interior components. Care should be exercised at disassembly for lamp bulb to note exact position of all components for easy reassembly.

To calibrate run drive so that rib "A" is centered between mounting screws "B". Loosen cam screw and adjust cam so that switch plunger is in the middle of the 3 notches. Tighten cam screw.

TROUBLE SHOOTING

A. General:
1. Check for loose, shorted or broken wires.
2. Check for proper cable connection sequence.

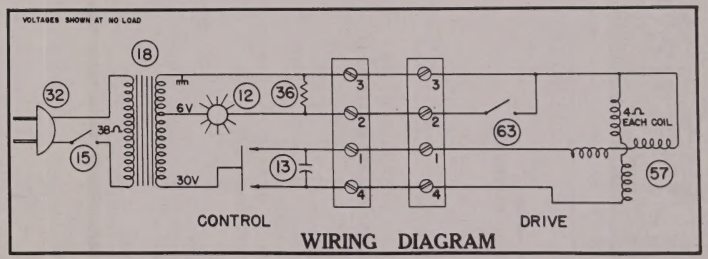
B. Inoperative Drive - No Power to Transformer:
1. Check line cord, line switch and primary of transformer.

C. Inoperative Drive - No Power to Motor:
1. Check secondary of transformer.
2. Check directional switch.
3. Check conductors, number 1, 3, and 4 of cable.

D. Inoperative Drive - Power to Motor:
1. Check capacitor.
2. Check motor for open or shorted coils.
3. Check gear train.
4. Check motor bearings.

E. Operative Drive - No Indication:
1. Check conductors, number 2 and 3 of cable.
2. Check lamp.
3. Check resistor.
4. Check for loose cam screw or broken cam.
5. Check switch for proper operation.

F. Lamp Bright at Any Position:
1. Check cam switch.
2. Check resistor.



WIRING DIAGRAM

Courtesy of Channel Master Crown Rotator Division

PARTS LIST

INDEX	PART NO.	NAME
	ROTATOR CONTROL PARTS	
1	*	Housing base
2	11728	Housing cover
3	11727	Switch rocker
4	*	Bottom cover
5	12105	Auto. housing base
6	12108	Dial skirt
7	*	Name plate
8	11968	Lens
9	12029	Meter & face
10	12143	Dial face
11	12138	Lamp socket
12	11748	Lamp
13	11911	Capacitor
14	12085	Capacitor
15	11207	Switch-push
16	12091	Switch-slide
17	12185	Trans. 110V-60 cy.
18	12136	Trans. 110V-60 cy.
19	12077	Trans. 110V-60 cy.
20	12048	Trans. 220V-50 cy.
21	12186	Trans. 220V-50 cy.
22	12187	Trans. 220V-50 cy.
23	12074	Motor & base
24	12181	First gear
25	12180	Second gear
26	12182	Third gear
27	12090	Plate-follower
28	12103	Rotating plate
29	12106	Knob-lower
30	12113	Knob-upper

* State Model No. of Rotator Control

INDEX	PART NO.	NAME
31	12193	Fastener kit
32	11088	Cord & Plug (all models)
33	12084	Strain reliever
34	12197	Fastener kit
35	11258	Switch blade
36	12141	Resistor assy.
	ANTENNA DRIVE PARTS	
50	11907	Mast assembly
51	11497-1	Plate w/studs
52	11497-2	Plate w/studs
53	11497-3	Plate w/studs
54	11428	First gear
55	11559	Second gear
56	11433	Third gear
57	11407	Motor
58	11492-1	Wire harness
59	11492-2	Wire harness
60	11492-3	Wire harness
61	11591	Position sender
62	12131	Cam
63	12132	Switch
64	12045	Housing-drive
65	11668	Umbrella
66	*	Cover
67	12192	Fastener kit
68	12191	Fastener kit
69	12195	Fastener kit
70	11939	Accessory kit

* State Model No. of Antenna Drive

PHOTOFACT® Folder with CIRCUITRACE®

MAGNAVOX CHASSIS U30-15-11, -12, U30-20-11, U30-21-11, U30-22-11, U30-23-11, V30-15-11, -12, V30-16-11, -12, V30-17-11, -12, V30-20-11, V30-21-11, V30-22-11, V30-23-11, V30-24-11

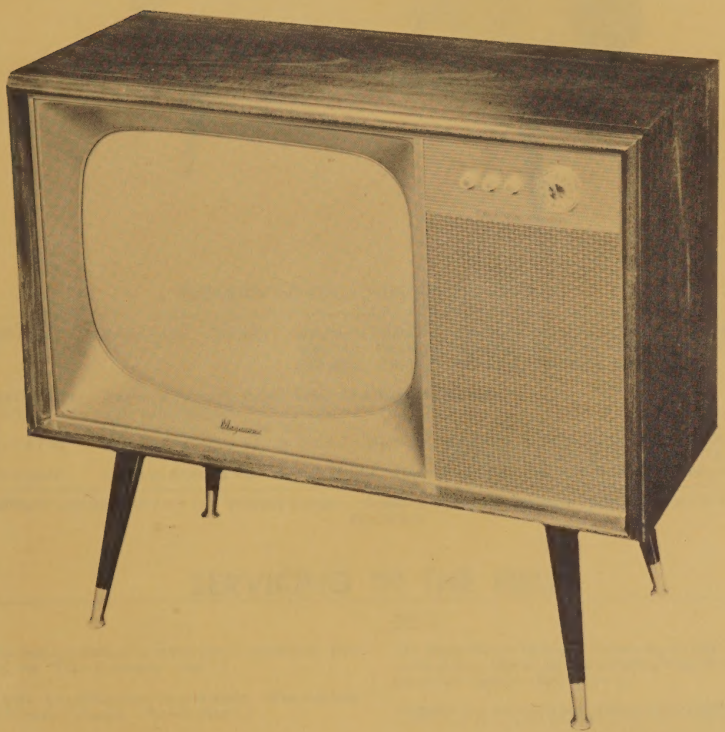
IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

MAGNAVOX CHASSIS U30-15-11, -12, U30-20-11, U30-21-11, U30-22-11, U30-23-11, V30-15-11, -12, V30-16-11, -12, V30-17-11, -12, V30-20-11, V30-21-11, V30-22-11, V30-23-11, V30-24-11

MAGNAVOX CHASSIS U30-15-11, -12, U30-20-11, U30-21-11, U30-22-11, U30-23-11, V30-15-11, -12, V30-16-11, -12, V30-17-11, -12, V30-20-11, V30-21-11, V30-22-11, V30-23-11, V30-24-11



REPRESENTATIVE MODEL USING CHASSIS V30-24-11

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

MAGNAVOX CHASSIS U30-15-11, -12, U30-20-11, U30-21-11, U30-22-11, U30-23-11, V30-15-11, -12, V30-16-11, -12, V30-17-11, -12, V30-20-11, V30-21-11, V30-22-11, V30-23-11, V30-24-11

MAGNAVOX CHASSIS U30-15-11, -12, U30-20-11, U30-21-11, U30-22-11, U30-23-11, V30-15-11, -12, V30-16-11, -12, V30-17-11, -12, V30-20-11, V30-21-11, V30-22-11, V30-23-11, V30-24-11

REPRESENTATIVE MODEL USING CHASSIS V30-24-11

TRADE NAME	MAGNAVOX	CHASSIS	U30-15-11, U30-15-12, U30-20-11, U30-21-11, U30-22-11, U30-23-11, V30-15-11, V30-15-12, V30-16-11, V30-16-12, V30-17-11, V30-17-12, V30-20-11, V30-21-11, V30-22-11, V30-23-11, V30-24-11
MANUFACTURER	Magnavox Co., 2131 Bueter Road, Fort Wayne 4, Inidana		
TYPE SET	Television Receiver		
TUBES	VHF - Twenty (Ch. V30-24-11)		
POWER SUPPLY	110-120 or 127 Volts AC, 60 Cycle	RATING	210 Watts, 1.7 Amp. @ 127 Volts AC (Ch. V30-24-11) 215 Watts, 1.9 Amp. @ 117 Volts AC (Ch. V30-24-11)
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		

FOR SERVICE INFORMATION ON VHF TUNERS 700662-1, 700662-2, 700731-1 & 700732-1 - SEE PHOTOFACT SET 447 FOLDER 2

SERVICING IN THE FIELD

FUSE

A fuse is used for horizontal sweep circuit protection. (For location, see "Tube Placement Chart".)

A fuse wire is used for filament protection. (For location, see M3 in photo "Chassis - Bottom View".)

TUNER OSCILLATOR ADJUSTMENTS

Turret Tuners #700825-1, 700662-1, 700-662-2:
To touch up the VHF Oscillator, remove Channel Selector and Fine Tuning Knobs.

Fireball Tuners 700731-1 & 700732-1:
To touch up the VHF Oscillator, it is necessary to remove the rear cover. The adjustments are accessible thru a hole in the side of the tuner rear cover.

AGC

No provision is made to vary the AGC on this receiver.

FOCUS

The focus may be varied by connecting the lead from pin 4 of the picture tube to various voltage points. (For location, see photo "Cabinet - Rear View".)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the Horizontal Hold is accomplished by the proper setting of the Horizontal Frequency Slug (B1). (For location, see "Tube Placement Chart".)

WIDTH

The width may be varied by a Width Control. (For location, see "Tube Placement Chart".)

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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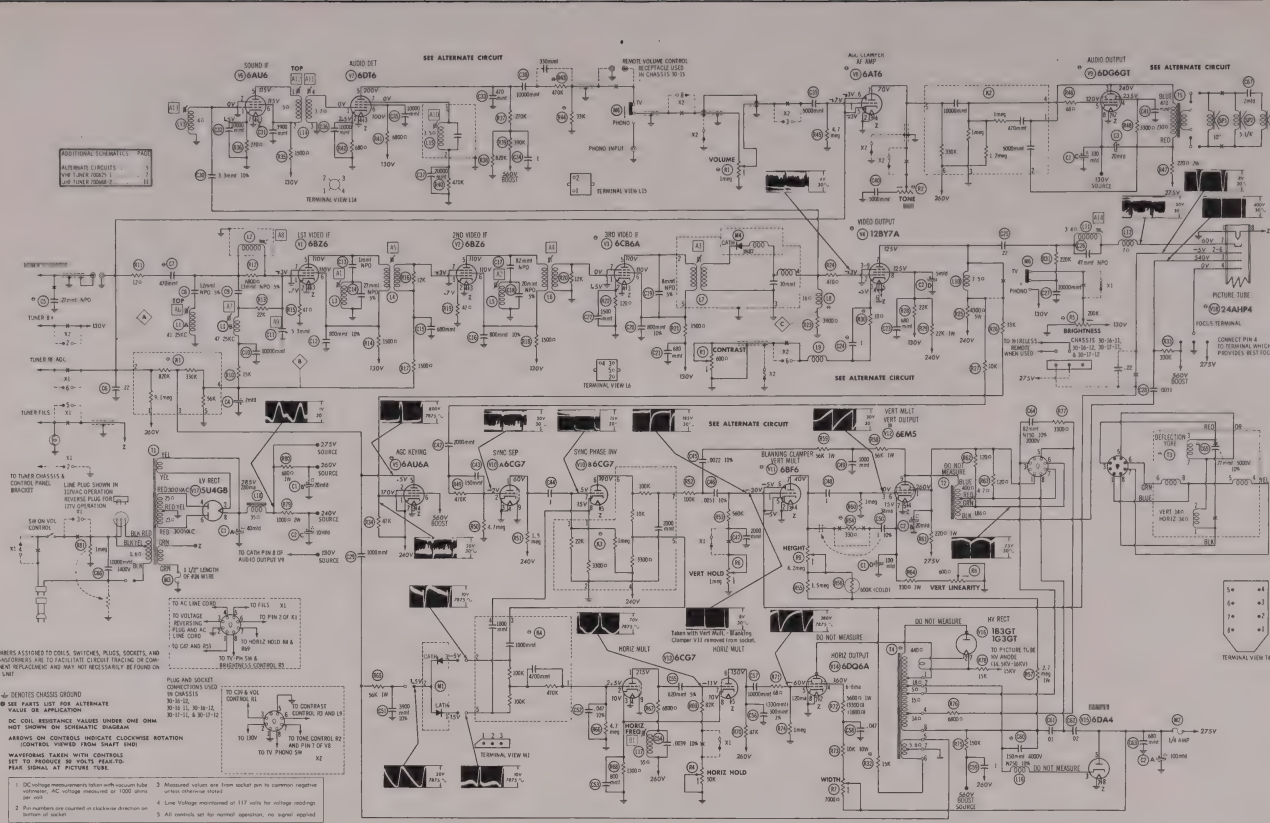
SOUND IF
6AU6
AUDIO DET
6DT6
SEE ALTERNATE CIRCUIT
REMOTE VOLUME CONTROL RECEPTACLE USED IN CHASSIS 30-15
PHONO
PHONO INPUT
VOLUME
AGC CLAMPER AF AMP
6AT6
AUDIO OUTPUT
6DG6GT
SEE ALTERNATE CIRCUIT
TERMINAL VIEW L14
TERMINAL VIEW L15
1ST VIDEO IF
6BZ6
2ND VIDEO IF
6BZ6
3RD VIDEO IF
6CB6A
VIDEO OUTPUT
12BY7A
TERMINAL VIEW L6
CONTRAST
BRIGHTNESS
PICTURE TUBE
24AHP4
FOCUS TERMINAL
CONNECT PIN 4 TO TERMINAL WHICH PROVIDES BEST FOCUS
SEE ALTERNATE CIRCUIT
TUNER B+
TUNER RF AGC
TUNER FILS
TOP
TO TUNER CHASSIS & CONTROL PANEL BRACKET
LINE PLUG SHOWN IN 117VAC OPERATION REVERSE PLUG FOR 12V OPERATION
LV RECT
5U4GB
TO CATH PIN 8 OF AUDIO OUTPUT V9
5W ON VOL CONTROL
BLK RED
BLK RED
1 1/2" LENGTH OF #26 WIRE
TO AC LINE CORD
TO FILS
TO PIN 7 OF K1
TO VOLTAGE REVERSING PLUG AND AC LINE CORD
TO HORIZ HOLD R4 & R49
TO CAT AND POS
TO TV PIN 5W & BRIGHTNESS CONTROL R5
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT
DENOTES CHASSIS GROUND
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.
PLUG AND SOCKET CONNECTIONS USED IN CHASSIS 30-26-1, 30-26-11, 30-11, 30-16-12, 30-17-11, & 30-27-12
TO CH & VOL CONTROL R1
TO CONTRAST CONTROL R3 AND L9
TO 130V
TO TONE CONTROL R2 AND PIN 7 OF V8
TO TV PHONO SW
1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1000 ohms per volt.
2. Pin numbers are counted in clockwise direction on bottom of socket
3. Measured values are from socket pin to common negative unless otherwise noted
4. Line Voltage maintained at 117 volts for voltage readings
5. All controls set for normal operation, no signal applied
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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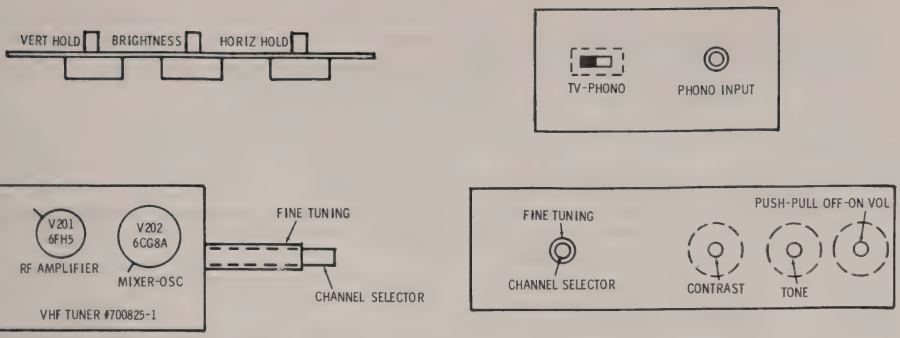
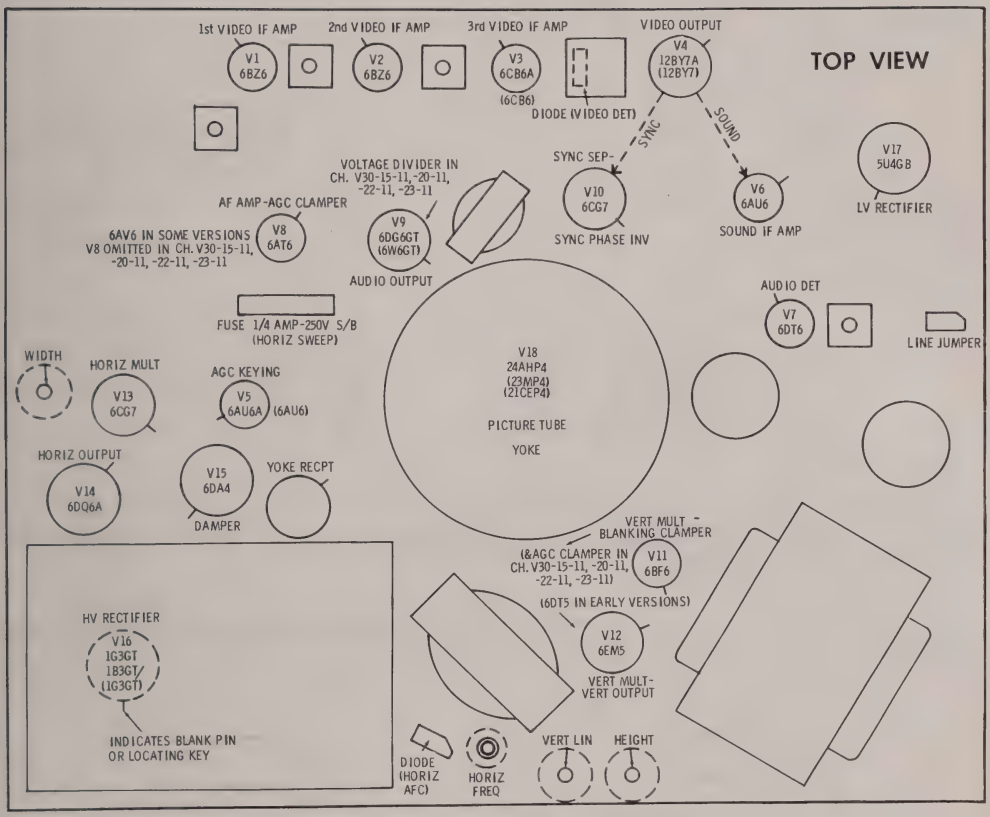
SYNC SEP
6CG7
SYNC PHASE INV
6CG7
AGC KEYING
6AU6A
BLANKING CLAMPER VERT MULT
6BF6
VERT MULT VERT OUTPUT
6EM5
DO NOT MEASURE
HEIGHT
VERT HOLD
VERT LINEARITY
DEFLECTION YOKE
VERT 340 HORIZ 340
HORIZ MULT
6CG7
HORIZ MULT
6CG7
HORIZ OSC
6CG7
HORIZ FREQ
HORIZ HOLD
HORIZ OUTPUT
6DQ6A
HV RECT
1B3GT 1G3GT
TO PICTURE TUBE HV ANODE (14,500-16KV)
DAMPER
6DA4
WIDTH
TERMINAL VIEW T4
TERMINAL VIEW M1

MAGNAVOX CHASSIS U30-15-11, -12, U30-20-11, U30-21-11, U30-22-11, U30-23-11, V30-15-11, -12, V30-16-11, -12, V30-17-11, -12, V30-20-11, V30-21-11, V30-22-11, V30-23-11, V30-24-11

TUBE PLACEMENT CHART





TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound V17, Fuse Wire (F11), V15

SWEEP FAILURE
No raster, has sound V13, V14, V15, Fuse (Sweep), V16, V18
No vertical deflection V11, V12
Poor vert. linearity or foldover V11, V12
Poor horiz. linearity or foldover V13, V14, V15
Narrow picture V13, V14, V15, V17
Vert. off freq. V11, V12
Horiz. off freq. Diodes (Horiz. AFC), V13

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, V3, Diode (Video Det.), V4
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V4, V18
Has pic, no sound V6, V7, V8, V9
Overloaded picture V5

SYNC FAILURE
No vert. sync V10
No horiz. sync V10
No vert. or horiz. sync V10

MAGNAVOX CHASSIS U30-15-11, -12, U30-20-11, U30-21-11, U30-22-11, U30-23-11, V30-15-11, -12, V30-16-11, -12, V30-17-11, -12, V30-20-11, V30-21-11, V30-22-11, V30-23-11, V30-24-11

FOLDER 1

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: A1, A2, A4 thru A8 .... GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
A3, A10 thru A14 ..... GENERAL CEMENT #8721, 8722
WALSCO #2519

VIDEO IF ALIGNMENT

Connect the negative lead of a 1.5 volts bias supply to point Ⓐ. Positive to chassis.
Connect the negative lead of a 3 volt bias supply to point Ⓑ. Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.
Preset Mixer Plate Coil by turning core fully counterclockwise.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	High side thru .01mfd to pin 1 (grid) of 1st Video IF Amp. Low side to chassis.	44MC (10MC Swp)	39.75MC	Any non-interfering channel	Vert. Amp. thru 10K to point Ⓒ. Low side to chassis. (Across Video Det. load)	A1	Adjust to place marker in trap notch as in Fig. 1.
2.	"	"	47.25MC	"	"	A2	"
3.	"	"	42.25MC 45.0MC 45.75MC	"	"	A3, A4, A5	Check for response similar to Fig. 1. If necessary, adjust A3 for maximum gain, A4 to place 45.75MC marker at 50% on high frequency side and A5 to place 42.25MC marker at 50% on other side.
4.	Place a thin insulated, metal strip between the Mixer-Osc. tube (V202) and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	"	41.25MC	"	"	A6	Adjust to place marker in trap notch as in Fig. 2.
5.	"	"	47.25MC	"	"	A7	"
6.	"	"	42.25MC 45.0MC 45.75MC	"	"	A8, A9, & Mixer Plate Coil	Adjust for maximum gain and symmetry of response similar to Fig. 2 with markers as shown.

SOUND IF ALIGNMENT

Preset A10 fully counterclockwise.
Tune the receiver to a strong local station (preferably with a test pattern and tone signal or music). Adjust A10 just past the point of maximum sound and MINIMUM distortion.
Reduce the signal input by disconnecting the antenna or connecting an adjustable pad across the antenna terminals so that with the volume set near maximum, sound is at a low level. Set the Fine Tuning control to the verge of distortion.
Adjust A11, A12 and A13 for MINIMUM distortion.

4.5MC TRAP ALIGNMENT

Tune in a strong TV signal and set Contrast at maximum. Adjust the Fine Tuning until a beat pattern is visible. Adjust A14 for MINIMUM beat interference.

FIG.1

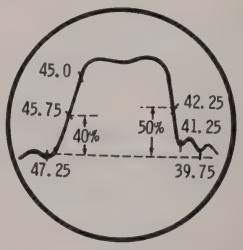
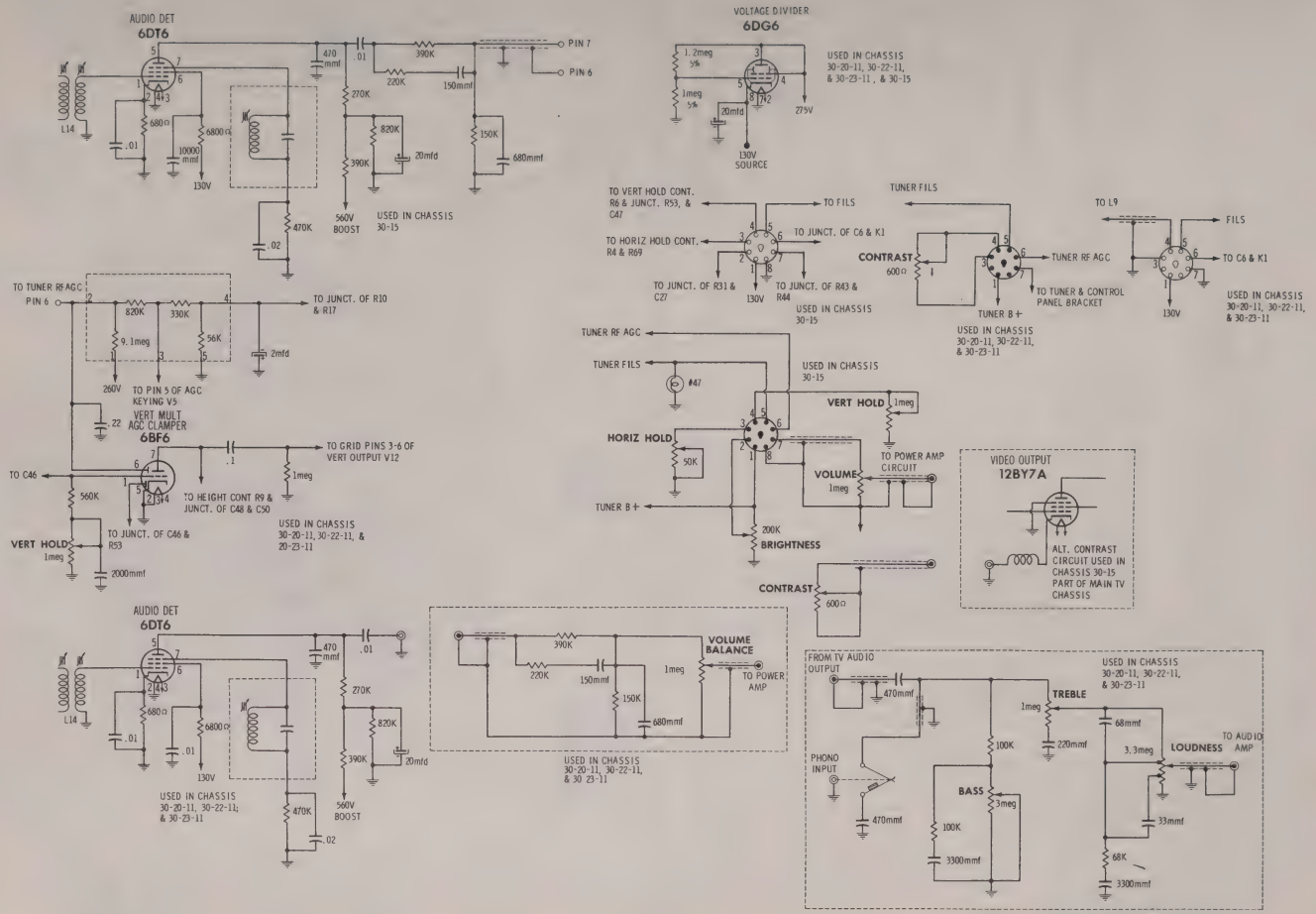


FIG.2



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ALTERNATE CIRCUITS

TUNER ALIGNMENT INSTRUCTIONS

700825-1

PRE-ALIGNMENT INSTRUCTIONS

The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.

VHF OSCILLATOR ALIGNMENT

Connect the negative lead of a 1.5 volt bias supply to point (T). Positive to chassis.
Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.
Set the Fine Tuning to the center of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC	211.25MC 215.75MC	13	Vert. Amp. thru 47K across Video Det. load.	A201	Adjust to place sound marker in trap notch as in Fig. 201. Video marker should fall at 50%.
			207MC	205.25MC 209.75MC	12		A202	
			201MC	199.25MC 203.75MC	11		A203	
			195MC	193.25MC 197.75MC	10		A204	
			189MC	187.25MC 191.75MC	9		A205	
			183MC	181.25MC 185.75MC	8		A206	
			177MC	175.25MC 179.75MC	7		A207	
			85MC	83.25MC 87.75MC	6		A208	
			79MC	77.25MC 81.75MC	5		A209	
			69MC	67.25MC 71.75MC	4		A210	
			63MC	61.25MC 65.75MC	3		A211	
			57MC	55.25MC 59.75MC	2		A212	

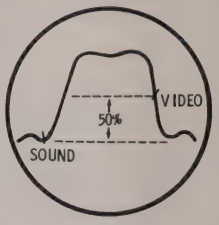


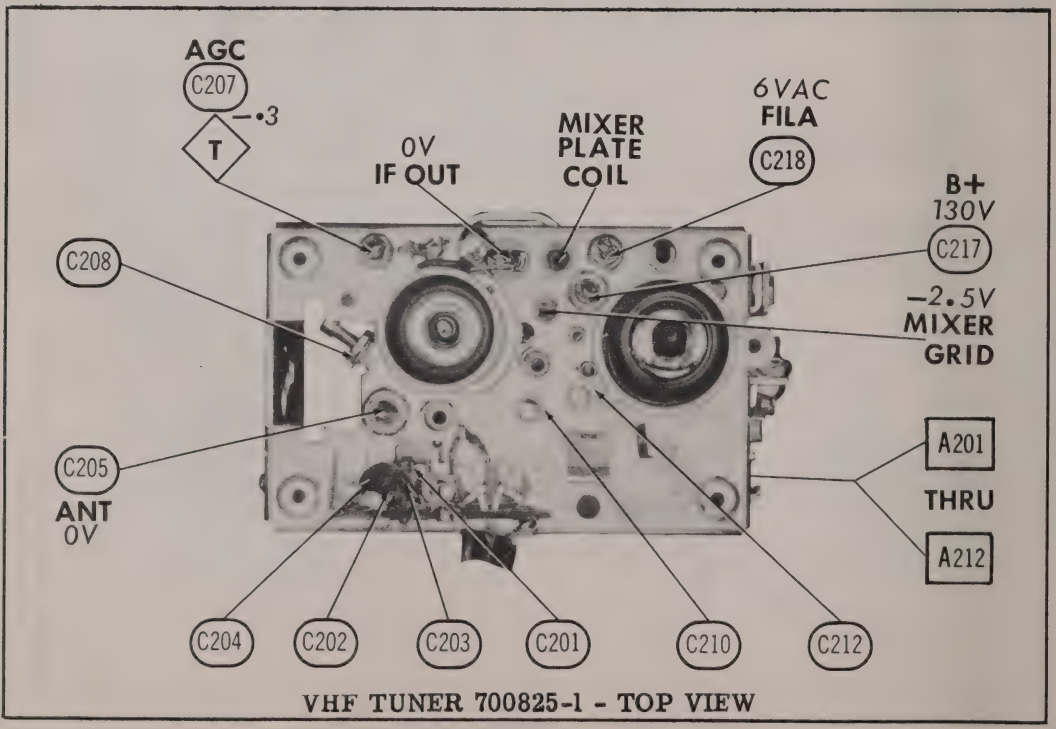
FIG 201

VHF RF AND MIXER ALIGNMENT

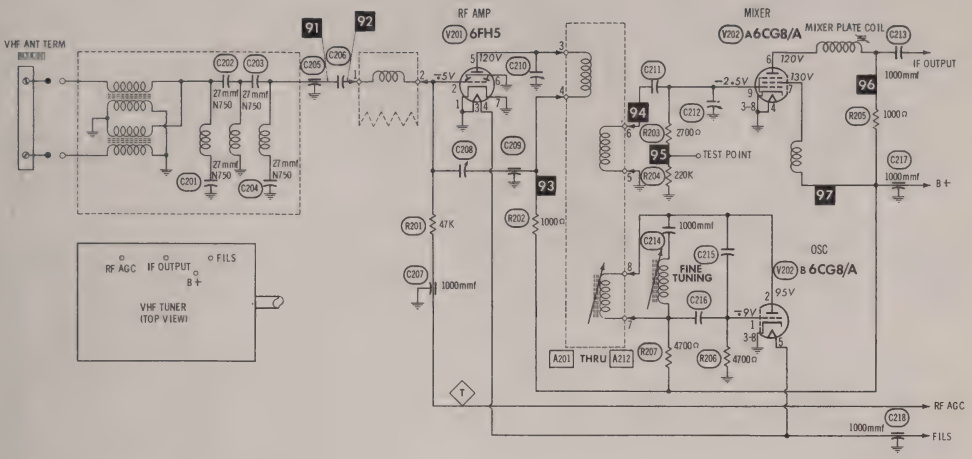
This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

UHF TUNER

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.



VHF TUNER 700825-1 - TOP VIEW



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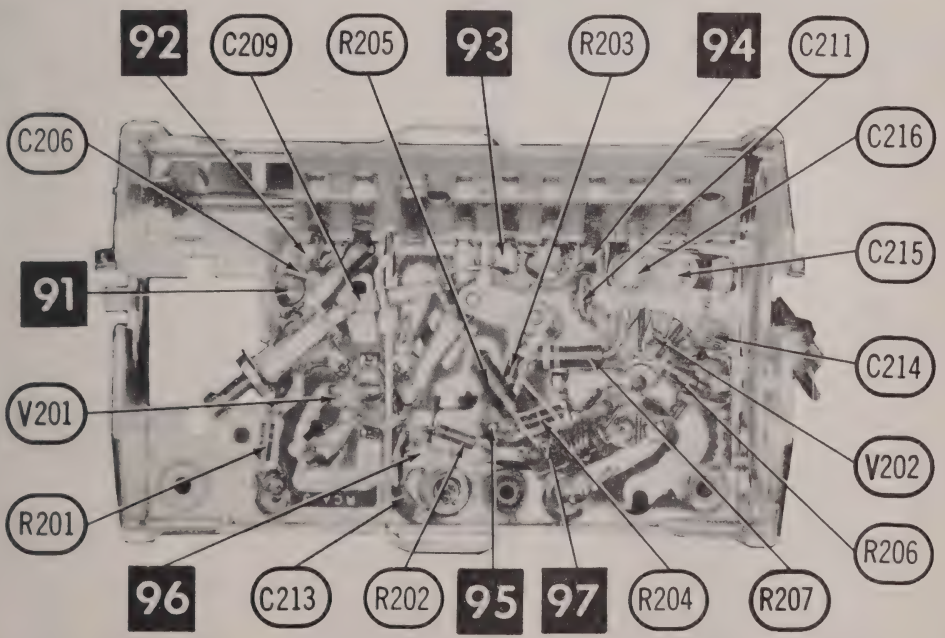
VHF TUNER 700825-1



A Howard W. Sams CIRCUITRACE Photo

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

VHF TUNER 700825-1 - BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	GENERAL ELECTRIC * USE	TYPE	RAYTHEON * USE	TYPE	SYLVANIA * TYPE
V1	1st Video IF Amp.	6BZ6	V10	Sync Sep. - Sync Phase Inv.	6CU7
V2	2nd Video IF Amp.	6BZ6	V11	Vert. Mult.- Blanking Clamper	6BF6 ②
V3	3rd Video IF Amp.	6CB6A (6CB6) *	V12	Vert. Mult.- Vert. Output	6EM5 ③
V4	Video Output	12BY7A (12BY7) *	V13	Horiz. Mult.	6CU7
V5	AGC Keying	6AU6A (6AU6) *	V14	Horiz. Output	6DQ6A
V6	Sound IF Amp.	6AU6	V15	Damper	6DA4
V7	Audio Det.	6T7G	V16	HV Rectifier	1G3GT/1B3GT (1G3GT) *
V8	AF Amp - AGC Clamper	6AT6 ① ②	V17	LV Rectifier	5U4GB
V9	Audio Output	6KD6GT (6W6GT) * ②			

‡ Some Chassis may use 6AV6 in this application.
① In Chassis 30, 32, 33 & 35, V8 is omitted; V11 becomes Vert. Mult. - Blanking Clamper - AGC Clamper; V9 becomes Voltage Divider.
② Early Production Models use 6CU7 in this application.

* Alternate.

PICTURE TUBE

ITEM No.	REPLACEMENT DATA: MAGNAVOX PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
V18	24ASP4	24AEP4 ①	24ASP4 ①	24ASP4 ①	24ABP4 ①	① Aluminized
	21CEP4	21CEP4 ①	21CEP4 ①	21CEP4/21CEP4A ①	21CEP4/21CEP4A ①	② Silver Screen "55"
	23MP4		23MP4 ①		23MP4 ②	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP.	VOLT.	REPLACEMENT DATA: MAGNAVOX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	40	350	27002I-73 ①	AFBK-130-10	D0696	TP423.4	TMQ-4685 TD-20-350	TVLS-4606.8*	
B	30	350							
C	100	300							
D	100	50							
C2A	100	250	27001I-75	AFBK-07	D0044	TP484.4	TMQ-4310	TVLS-4636.9*	
B	20	350							
C	20	350							
D	5	350							
C3	20	350	27002I-30	PRS2T35	RR2035	TC6S	TD-20-350	TVA-1606	
C4	2	50	27002I-33	PRS1300	BSR1-50	TC30S	TD-2-50	TVA-1504	

① Chassis V30-1I-11, -13, V30-1I-11, -12 use 40mfd @ 350V, 30mfd @ 350V, 20mfd @ 300V, 100mfd @ 50V (Part #27001I-81) in this application.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C5	27 NPO		NPO-DI 2S	TCS-27	CD02S7C	CC07S-270	CN0-427	10TCC-Q27	
C6	3± .5mV	③	P2S8N-33		CU2S2F33	D10F-4-224	GF1M-2033	2TM-F33	
C7	470		BPD-00047	DD-471	BYA10F47	CC07S-471	B-347	10TS-T47	
C8	13 NPO	5%		TCS-13	CD02S3C	CC07S-130	CN0-413	10TCC-Q23	
C9	15 NPO	5%		TCS-15	CD02S5C	CC07S-150	CN0-415	10TCC-Q25	
C10	10000		BPD-01	DD-103	BYA10I6	CC07S-103	B-115	5SBK-B10	
C11	3-13			TZC-3		CTV-C	CT56S		
C12	800	10%	DI-820	DD-801	S8S7T6	CC07S-801	GP383	10TS-T80	
C13	800		NPO-DI 1.0			CC07S-V10		10TCC-V10	
C14	27	NPO 5%	NPO-DI 2S	TCS-27	CD02S7C	CC07S-270	CN0-427	10TCC-Q27	
C15	68		DTZ-2S	DTZ-68	CD02S6C	CC07S-680	CN0-468	10TCC-Q68	
C16	800	10%	DI-830	DD-801	S8S7T6	CC07S-801	GP383	10TS-T80	
C17	53	NPO Pt.#2S0688-1							
C18	30	NPO 5%	NPO-DI 3O	DTZ-3O	CD02S3C	CC07S-300	CN0-430	10TCC-Q30	
C19	9	NPO .5	NPO-DI .5 2		CD07C			10TCC-Q50	
C20	800	10%	DI-830	DD-801	S8S7T6	CC07S-801	GP383	10TS-T80	
C21	68		BPD-00068	DD-681	BYA10T68	CC07S-681	B-368	10TS-T68	
C22	1800		BPD-0018	DD-182	BYA10I82	CC07S-182	B-218	5SBK-D18	
C23	680		BPD-00068	DD-681	BYA10I68	CC07S-681	B-368	10TS-T68	
C24	.1	300V ①	P2S8N-1	DF-104	CU2F1	2DP-3-104	GEM-201	2TM-P10	
C25	.13	400V	P4S8N-23		CU4F23	4DP-3-234	GEM-4023	4TM-P23	
C26	47	NPO 5%	NPO-DI 4T	DTZ-4T	CD04S7C	CC07S-470	CN0-447	10TCC-Q47	
C27	10000		BPD-01	DD-103	BYA10I6	CC07S-103	B-115	5SBK-B10	
C28	.008	600V	P6S8N-0033	DE-332	CU6S8D33	6DP-1-333	GFM-6233	6TM-D33	
C29	1000		BPD-001	DD-102	BYA10I6	CC07S-102	B-105	5SBK-B10	
C30	13	10%	DTZ-1S .5 3	DTZ-13S3		CC07S-130	CN0-313	10TCC-V13	
C31	5900		DI-6000	DD-592	L2S039	CC07S-592	GP239	10TS-S59	
C32	10000		BPD-01	DD-103	BYA10I6	CC07S-103	B-115	5SBK-B10	
C33	470		BPD-00047	DD-471	BYA10T47	CC07S-471	B-347	10TS-T47	
C34	.1	400V	P4S8N-1	DF-104	CU4F1	4DP-3-104	GEM-401	4TM-P10	
C35	10000		BPD-01	DD-103	BYA10I6	CC07S-103	B-115	5SBK-B10	
C36	10000		BPD-01	DD-103	BYA10I6	CC07S-103	B-115	5SBK-B10	
C37	36000		BPD-02	DD-303	BYB6S6	CC07S-303	B-130	5SBK-B20	
C38	10000		BPD-01	DD-103	BYA10I6	CC07S-103	B-115	5SBK-B10	
C39	5900		BPD-005	DD-502	BYA10D6	CC07S-502	B-350	5SBK-D50	
C40	5000		BPD-005	DD-502	BYA10D6	CC07S-502	B-350	5SBK-D50	
C41	470		BPD-00047	DD-471	BYA10T47	CC07S-471	B-347	10TS-T47	
C42	3000		BPD-003	DD-302	BYA10D3	CC07S-302	B-320	5SBK-D30	
C43	180		1488-00015	TCZ-18S	SWST13	CM-1SB-181M	MC32S	M6-1S8	
C44	.1	400V	P4S8N-1	DF-104	CU4F1	4DP-3-104	GEM-401	4TM-P1	
C45	.0022	600V 10%	V94C8D22-10%		PM8D22	6DP-1-222	GP322	6TM-D22	
C46	.0015	600V 10%	V94C8D15-10%		PM8D15	6DP-1-152	JL3S0	6TM-D50	
C47	3000		BPD-003	DD-302	BYA10D2	CC07S-302	B-230	5SBK-D30	
C48	.1	400V	P4S8N-1	DF-104	CU4F1	4DP-3-104	GEM-401	4TM-P10	
C49	1000		BPD-001	DD-102	BYA10I6	CC07S-102	B-115	5SBK-B10	
C50	.1	400V 10%	V94C4F1-10%		PM4F1	4DP-3-104	GEM-4001	4TM-P10	
C51	5900	10%	DI-6000		L8S039	CC07S-592	JL339	10TS-D59	
C52	.047	200V 10%	V94C2M47-10%		PM2M47	4DP-3-473	GEM-4815	2TM-D47	
C53	800		BPD-0008	DD-801	L2DD8	CC07S-801	B-382	10TS-T80	
C54	.0039	300V 10%	DI-4000		DP3S8D39	6DP-1-392	JL329	6PS-D39	
C55	620	5%	1488-00832		S8S7T62	CC07S-621		M6-1S8	
C56	300	5% (330) † Pt. #2G228-241				VCM-2S-301G			
C57	10000		BPD-01	DD-103	BYA10I6	CC07S-103	B-115	5SBK-B10	

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C58	.047 400V		P4S8N-047	DD-303	CU4S4F	4DP-3-473	GEM-4147	4TM-P47	
C59	.1 400V		P4S8N-1	DF-104	CU4F1	4DP-3-104	GEM-401	4TM-P10	
C60	180 6000V NT50 10%	Pt. #2S0178-89							
C61	.01 600V		P6S8N-01	DS-103	CU6S6E	6DP-1-103	GEM-611	6TM-E10	
C62	.03 600V	(.039) †	P6S8N-03	DD-303	CU6S6S	6DP-1-303	GEM-613	6TM-S20	
C63	680		BPD-00068	DD-681	BYA10T68	CC07S-681	B-368	10TS-T68	
C64	82 3000V NT50 10%	Pt. #2S0178-70							
C65	2T 5000V 10%	①							
C66	10000 1400V		DAC-2T	DD06-103	HVF1S6	1SDP-3-103		BL-B0	
C67	.2mfd 100V		P2S12-.2		MP2W2				

③ May not be used in some versions
‡ Chassis U, V30-2U-11, -12-01, -12-11 use 100mmf in this application.
④ Some versions use 68mmf, 10%, 4KV, NT50 (Pt. #2S0178-33) in this application.

† Alternate Value.

CONTROLS

ITEM No.	RATING: RESIST-ANCE	WATTS	REPLACEMENT DATA: MAGNAVOX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	‡	2301S5-1	BPL-70	C47B-1meg-2	TP503-1M1B7	P1S4A	Volume Note 1
B	Shaft			Not Reg.	Not Reg.	Not Reg.	Not Reg.	
C	Switch			Not Reg.	Not Reg.	Not Reg.	Not Reg.	Push-Pull Off-On
D	Shaft		2301S6-17	Not Reg.	Not Reg.	Not Reg.	Not Reg.	Volume Note 2
E	Shaft			T7-70	B47-1meg-2	B13-137	TA5A	
R2A	500K	‡	2301S6-12	Not Reg.	Not Reg.	T164	Not Reg.	Tone Note 2
B	Shaft			T7-60	B47-500K-2	B13-133	TA8A	
R3A	500Ω	‡	2301S6-73	Not Reg.	Not Reg.	T164	Not Reg.	Contrast
B	Shaft			B-63	F8-3	B13-129	D43	
R4A	150K	‡	2301S6-9	Not Reg.	Not Reg.	T164	Not Reg.	Horiz. Hold
B	Shaft			T7-51	B47-150K-S	B11-132	PT45L	
C	Shaft		2301S6-10	Not Reg.	Not Reg.	T164	Not Reg.	Brightness
R5A	100K	‡		T7-46	B47-100K-S	B11-129	D43	
B	Shaft		2301S6-75	Not Reg.	Not Reg.	T164	Not Reg.	Brightness Note 2
C	Shaft			B-45	F8-3	B11-129	D43	
R8A	1meg	‡	2301S6-14	Not Reg.	B47-1meg-S	B11-137	P7A1S41	Vert. Hold
B	Shaft			Not Reg.	Not Reg.	T164	Not Reg.	
R7A	750Ω	‡	2301S6-15	AB-13	B47-10K-2	B11-05	TA5L	Width
B	Shaft			AK-1	Not Reg.	T164	Not Reg.	
R9A	60Ω	‡	2301S6-13	T7-4	B47-75Ω-S	B11-109	P7A5L	Vert. Linearity
B	Shaft			Not Reg.	Not Reg.	T164	Not Reg.	
R10	4.2meg	‡	2301S6-16	T7-56	B47-1meg-S	H1C5	P7A8L	Height

Note 1. Chassis U, V30-2U-11 use Part #2301S6-74.
Note 2. Used in Chassis U, V30-1U-11, -12.
Note 3. Chassis V30-1S-11, -12, V30-1U-11, -12 use Part #2301S3-12.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R10	15K	
R11	12Ω	
R12	18000Ω	
R13	22K	
R14	1500Ω	
R15	47Ω	
R16	39Ω	
R17	1500Ω	
R18	1500Ω	
R19	47Ω	
R20	12K	
R21	1500Ω	
R22	120Ω	
R23	1200Ω	
R24	470Ω	
R25	3900Ω	
R26	470Ω 5W	Pt. #2400T8-23 (IRC #PW5-470Ω)
R27	33K	
R28	10K	
R29	22K 1W	
R30	10Ω	①
R31	220K	①
R32	15K	①
R33	330K	

ITEM No.	RATING	REMARKS
R34	47K	
R35	150Ω	
R36	100Ω	
R37	270K	
R38	820K	
R39	295K	
R40	475K	
R41	6800Ω	
R42	950Ω	
R43	470K	②
R44	33K	
R45	4.7meg	
R46	1MΩ	
R47	220Ω 2W	
R48	330Ω	
R49	470K	
R50	4.7meg	
R51	1.5meg	
R52	100K	
R53	560K	
R54	330Ω	①
R55	1.5meg	
R56	600K (Cold)	Pt. #2301S3-2
R57	2.7meg 1W	
R58	66K 1W	

ITEM No.	RATING	REMARKS
R59	56K 1W	
R60	1meg	
R61	220Ω 1W	
R62	120Ω	
R63	120Ω	
R64	330Ω 1W	
R65	56K 1W	
R66	4.7meg	
R67	6800Ω	
R68	1500Ω	
R69	33K	
R70	47K	
R71	68Ω	
R72	5600Ω 1W	(1800Ω)*(3300Ω)*
R73	10K 10W ③	Pt. #2400T6-5 (IRC #PW10-10KΩ)
R74	1meg	
R75	150K	
R76	680Ω	
R77	3300Ω	
R78	15K	
R79	1000Ω 2W	
R80	680Ω 1W	
R81	1meg	

* Alternate Value.

④ Not used in early production chassis
① Chassis V30-1S-11, -12 use 560Ω in this application.
② Chassis U, V30-1S-11, -12 use 390K in this application. Chassis V30-1S-11, -12 use 180K in this application.
③ Chassis V30-1S-11, -12 use 47K in this application. Chassis U, V30-1S-11, -12 use 10K in this application.
⑤ May not be used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: MAGNAVOX PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1A	41.25MC Trap	3803S2-1	TV-131	6236	RTC-8626	
B	47.25MC Trap		TV-151	6235	RTC-8556	
L2	1st Video IF	3807S6-1	TV-131	6236	RTC-8626	
L3	2S 75MC Trap	3804S1-1	TV-151	6235	RTC-8556	
L4	2nd Video IF	3807S9-1	TV-130	6319	RTC-8551	
L5	4T.35MC Trap	3803S1-1	TV-153	6238	RTC-8566	
L6	3rd Video IF	3807S8-2	TV-150	6318	RTC-8550	
L7A	4th Video IF	3808S1-1 ①				
B	RF Choke		BC-563	4805	RTC-8547	2uh
C	RF Choke		BC-566	4811	RTC-8521	5uh
L8	Shunt Peaking Coil	3806S3-2 ②	BC-562	6135	RTC-8579	60Ohuh
L9	Cathode Choke		BC-562	4804	RTC-8566	1 5uh

COILS (RF-IF) (cont)

ITEM No.	USE	REPLACEMENT DATA: MAGNAVOX PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L10	Shunt Peaking Coil	3803S2-2	TV-156	6181	RTC-8598	235uh
L11	4.5MC Trap	3806S5-1	TV-151	1470	RTC-8603	
L12	Series Peaking Coil	3806S2-16	TV-150	6153	RTC-8585	120uh
L13	1st Sound IF	3807S3-1	TV-110	1470	RTC-8603	
L14	2nd Sound IF	3807S3-2	TV-149			
L15	Quadrature Coil	3807S5-2	TV-124	1481	RTC-8606	
L16	RF Choke	3807S3-3				

ITEM No.	USE	REPLACEMENT DATA: MAGNAVOX PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
					EW-850	3uh

① Includes Assembly.

② Some versions may use 27Rh in this application (Pt. #2S0822-18).

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: MAGNAVOX PART No.	Merit PART No.	Miller PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L17	Horiz. Stabilizer	3805T2-9	TV-163	5210	RC11U	RTC-8522	RS-5	WLC-25

FILTER CHOKE

ITEM No.	RATINGS: CURRENT (Measured)	DC RES. @ CURRENT	INDUCTANCE @ CURRENT (000 ^)	REPLACEMENT DATA: MAGNAVOX PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L18	.380A	36Ω	.8 Hy.	3300T8-3				R-80BA	

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	SEC. 1	SEC. 2	REPLACEMENT DATA: MAGNAVOX PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V ① 1.7A Tap & 117V ② 1.9A	600VCT* @ 200A DC* SEC. 3 6.3V @ 9.8A	5V @ 2A	3001T1-1				R-80BA ①	① Parallel & Phase 6.3V Windings

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: MAGNAVOX PART No.	Merit PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	Vert. Output	3200T9-1						
T3	Yoke Horiz. 18.5MH 110^ Vert. 15MH	C-2607S4-2 †		PCM2045 ① ②	DY-27A ① ②	Y-52 ①	Y-60 ②	
	Alt. Yoke	7007I47-1 †						
	Yoke Rear Cover and Centering Device	7007I47-4						
T4	Horiz. Output	3807S5-1		RG-335 *			D-183 *	
	Alt. Horiz. Output	C380T79-1						

① Remove Horiz. and Vert. Damping Network from Yoke; use original Rear Cover and Centering Devices.
② Connect Yoke Terminal #2 to Plug #3; Yoke #1 to Plug #5; Yoke #10 to plug #8.
③ Connect Yoke Terminal #2 to Plug #4; Yoke #1 & #3 to plug #6; Yoke #7 to plug #9.
* Alternate. † Used in 23" chassis.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

ORIGINAL TERMINAL (CONNECTIONS)	Merit Replacement Connections	Rogers Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
1			1		1
2			2		2
3			3		3
4			4		4
5			5		5
6			6		6
7			7		7
8			8		8

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE: PRI	SEC	REPLACEMENT DATA: MAGNAVOX PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T5	4300Ω	3-4Ω	3203T9-1	A-3018	A-3949	26S20	S-54X	

MAGNAVOX CHASSIS U30-1S-11, -12, U30-2U-11, U30-2U-11, U32, V30-3U-11, V30-3U-11, V30-3S-11, V30-3S-11, V30-3U-11, V30-3U-11

FOLDER 1

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MAGNAVOX PART No.	QUAM PART No.	
SP1	10"	PM	4-6Ω	584003	10A4AZ5.4	
SP2	5 1/4"	PM	6-8Ω	584034-1	52A1	
SP3	4"	PM	3-4Ω	584016-1	4A15	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	MAGNAVOX PART No.	REPLACEMENT DATA
K1	Tuner AGC Filter	56K, 330K, 820K, 9.1meg	250349-1	Note 1
K2	Audio Coupling	470mmf, 5000mmf, 10000mmf, 330K, 1meg, 1meg, 1.2meg	250299-1 *	
K3	Sync Phase Inverter Comp	2000mmf, 3300Ω, 3300Ω, 10K, 22K, 100K, 1meg	250346-1	Note 2
K4	AFC Comp.	1000mmf, 1000mmf, 4700mmf, 100K, 100K, 470K	250345-1	Note 3

Note 1 Some versions may use Component Combination Part #250296-1 in this application.
Note 2 Some versions may use Component Combination Part #250302-1 in this application.
Note 3 Some versions may use Component Combination Part #250298-1 in this application.
* Pt. #250348-1 may be used as replacement. Remove R46 (68Ω), connect Pin 4 of #250348-1 directly to Pin 5 of V9 (Audio Output).

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	MAGNAVOX PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1		530045-1 *	6GD1 *				* Dual Selenium Diode

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			MAGNAVOX PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	1/4A 250V S/B	180157-30		313.250 (3AG 1/4A 250V S/B)	357001	MDL 1/4	4405
M3	$1\frac{1}{2}$" length of #24 wire							

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		MAGNAVOX PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M4	1N87		1N87	1N87	Video Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	MAGNAVOX PART No.	NOTES
M5	Tuner	700825-1	VHF, STANDARD COIL REPLACEMENT Part #66-4220A
	Tuner	700662-1	VHF (Long Shaft)
	Tuner	700662-2	VHF (Short Shaft)
	Tuner	700731-1	VHF
	Tuner	700732-1	VHF, with UHF Provisions
	Tuner	700688-2	UHF
M6	Switch	160289-1	TV-Phono (DPDT Slide Type)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

WIRING DATA

High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor

TUNER PARTS LIST AND DESCRIPTIONS

700 825–1

TUBES

• GENERAL ELECTRIC •			RAYTHEON • SYLVANIA •		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp.	6FH5	V202	Mixer - Osc.	6CG8A (6CG8) *

* Alternate

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	27 N750		N750-DI 25	TCZ-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C202	27 N750		N750-DI 25	TCZ-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C203	27 N750		N750-DI 25	TCZ-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C204	27 N750		N750-DI 25	TCZ-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C205								
C206								
C207	1000		EF-001	MFT-1000		CCF-102	CT280A	
C208								
C209								
C210								
C211								
C212								
C213	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C214	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C215								
C216								
C217	1000		EF-001	MFT-1000		CCF-102	CT280A	
C218	1000		EF-001	MFT-1000		CCF-102	CT280A	

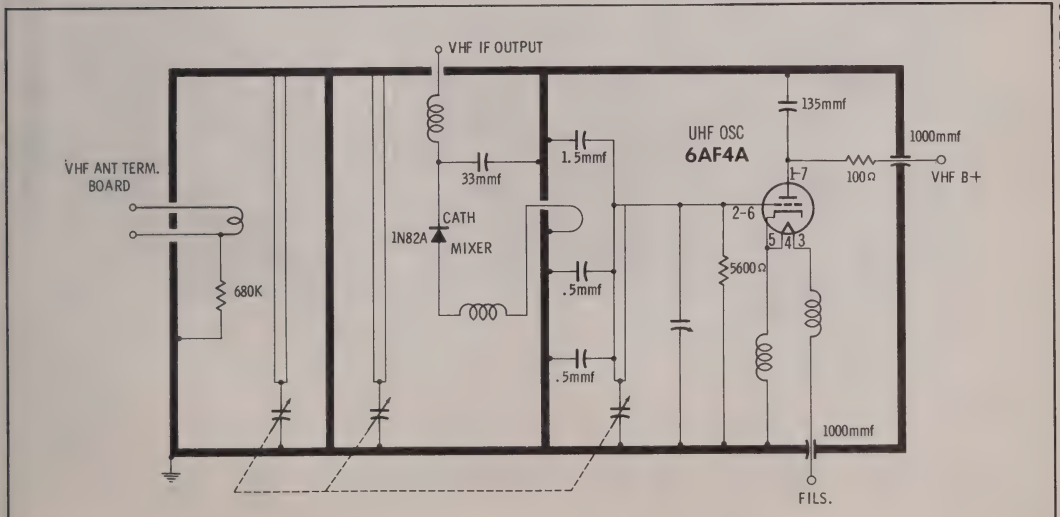
RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R201	47K	
R202	1000Ω	
R203	2700Ω	

ITEM No.	RATING	REMARKS
R204	220K	
R205	1000Ω	
R206	4700Ω	

ITEM No.	RATING	REMARKS
R207	4700Ω	



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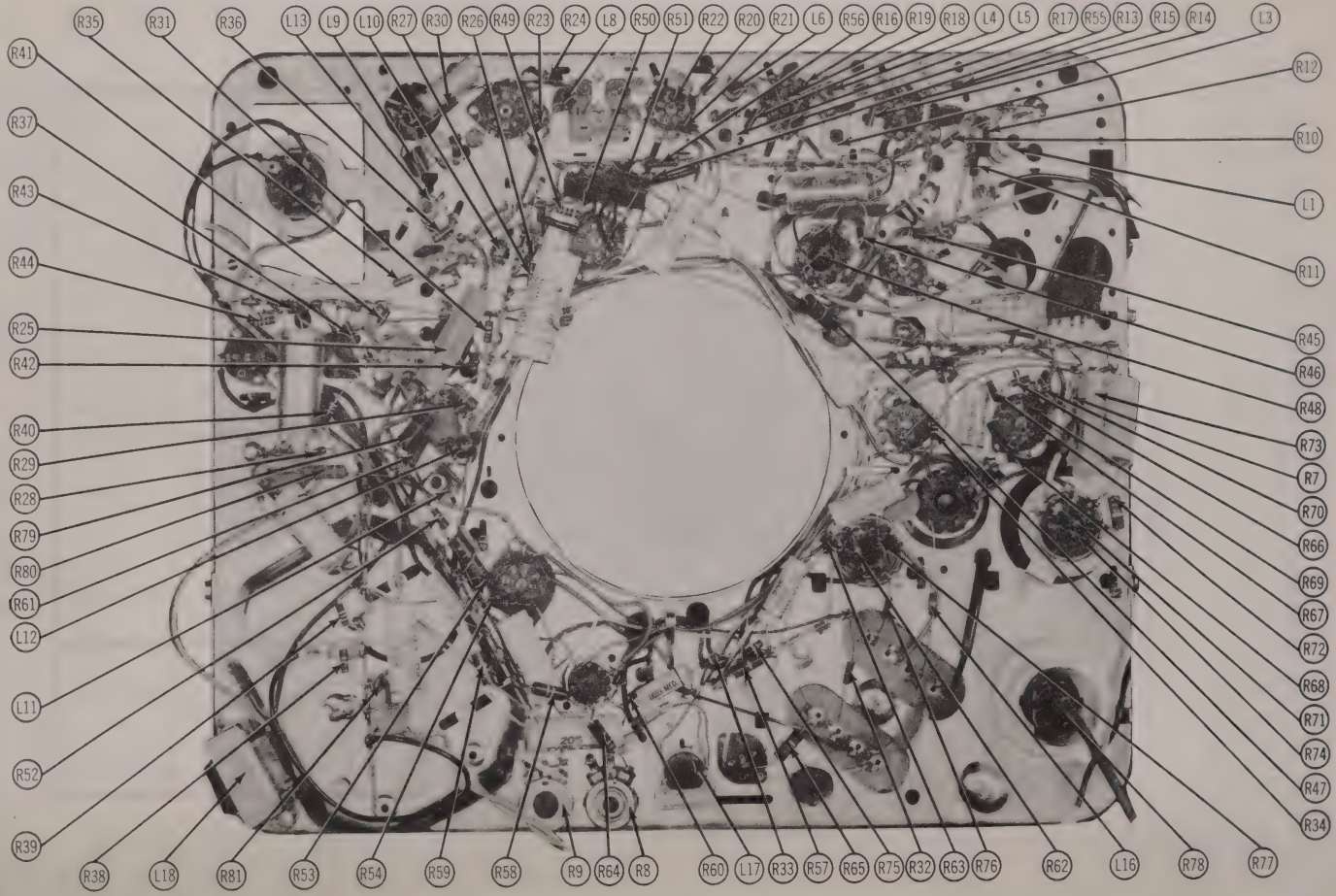
UHF TUNER 700 688–2

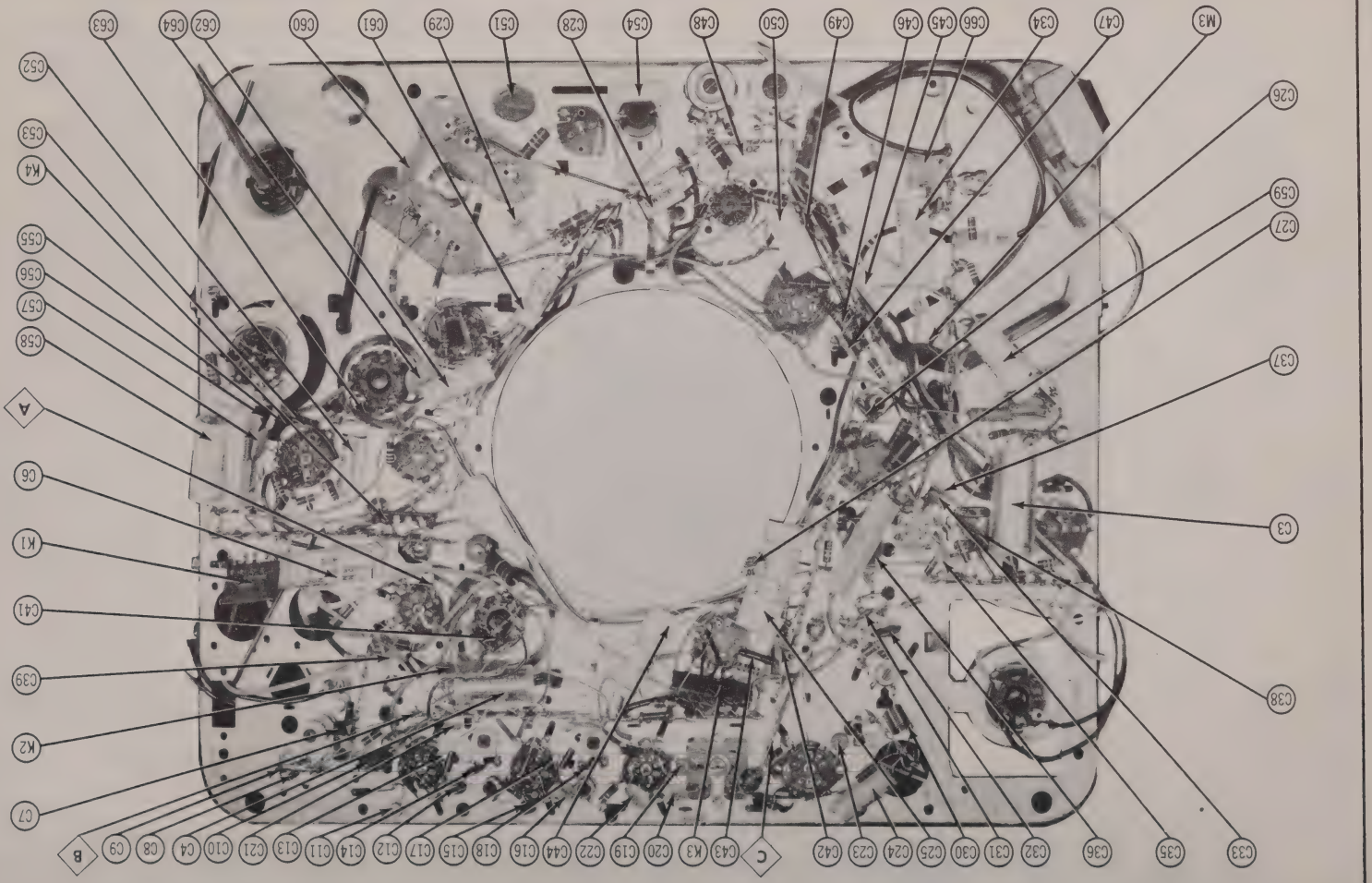
MAGNAVOX CHASSIS U30-15-11, -12, U30-20-11, U30-21-11, U30-22-11, U30-23-11, V30-15-11, -12, V30-16-11, -12, V30-17-11, -12, V30-20-11, V30-21-11, V30-22-11, V30-23-11, V30-24-11

FOLDER 1

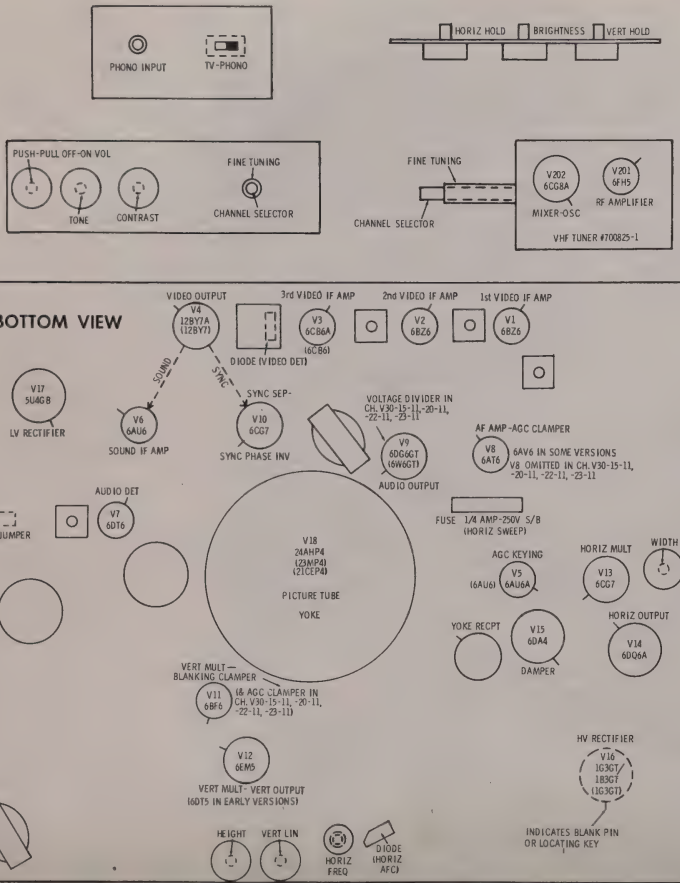


CHASSIS BOTTOM VIEW - RESISTOR & INDUCTOR IDENT.

CHASSIS BOTTOM VIEW - CAPACITOR, MISC., & ALIGN. IDENT.



TUBE PLACEMENT CHART



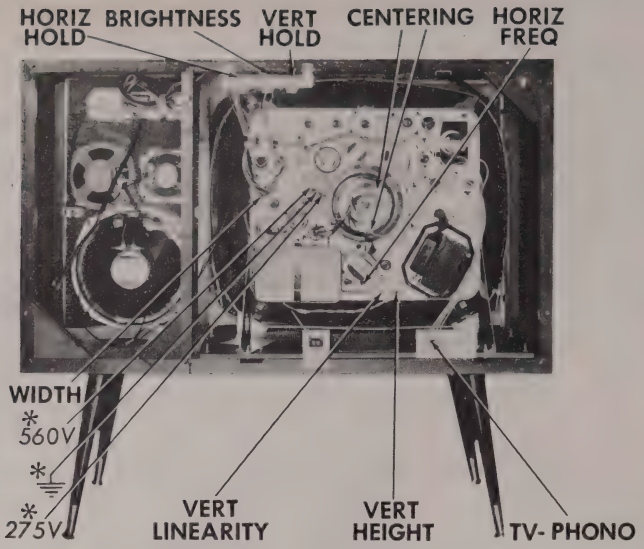
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	05K	47Ω	.1Ω	0Ω	▪1500Ω	▪1500Ω	0Ω		
V2	6BZ6	57K	47Ω	.1Ω	0Ω	▪1500Ω	▪1500Ω	0Ω		
V3	6CB6A	0Ω	120Ω	.1Ω	0Ω	▪1500Ω	▪1500Ω	0Ω		
V4	12BY7A	• 90Ω	4400Ω	0Ω	.1Ω	.1Ω	0Ω	†5300Ω	▪22K	0Ω
V5	6AU6A	†22K	†1000Ω	0Ω	.1Ω	390K	†150K	†1000Ω		
V6	6AU6	4Ω	0Ω	.1Ω	0Ω	▪1500Ω	▪1500Ω	270Ω		
V7	6DT6	3.7Ω	680Ω	.1Ω	0Ω	†810K	▪6800Ω	470K		
V8	6AT6	4.7meg	0Ω	0Ω	.1Ω	1.2meg	1.2meg	†330K		
V9	6DG6GT	TP	0Ω	†485Ω	†3500Ω	550K	TP	.1Ω	¶	
V10	6CG7	†1.5meg	4.7meg	0Ω	0Ω	.1Ω	†13K	22K	3300Ω	0V
V11	6BF6	•880K	0Ω	0Ω	.1Ω	15K	15K	•†4meg		
V12	6EM5	†255Ω	NC	NC	.1Ω	0Ω	1meg	• 380Ω	NC	†750Ω
V13	6CG7	†7500Ω	2.2meg	1300Ω	0Ω	.1Ω	†47K	• 90K	1300Ω	0Ω
V14	6DQ6A	TP	.1Ω	TP	•† 15K	1meg	NC	0Ω	0Ω	TOP CAP †18Ω
V15	6DA4	NC	NC	¶	NC	†35Ω	NC	0Ω	.1Ω	
V16	1G3GT/ 1B3GT		PINS	1 THRU 8	HAVE	INFINITE	RESISTANCE			TOP CAP †460Ω
V17	5U4GB	NC	¶	NC	25Ω	NC	23Ω	NC	¶	
V18	24AHP4	0Ω	15K	†480K	0Ω	NC	15K	• 280K	.1Ω	
V201	6FH5	0Ω	1.2meg	0Ω	.1Ω	▪1000Ω	0Ω	0Ω		
V202	6CG8A	4700Ω	▪4700Ω	0Ω	0Ω	.1Ω	▪1000Ω	▪0Ω	0Ω	223K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.

† MEASURED FROM PIN 8 OF V17.
† MEASURED FROM PIN 3 OF V15.
▪ MEASURED FROM 130V SOURCE.

NC NO CONNECTION
TP TIE POINT



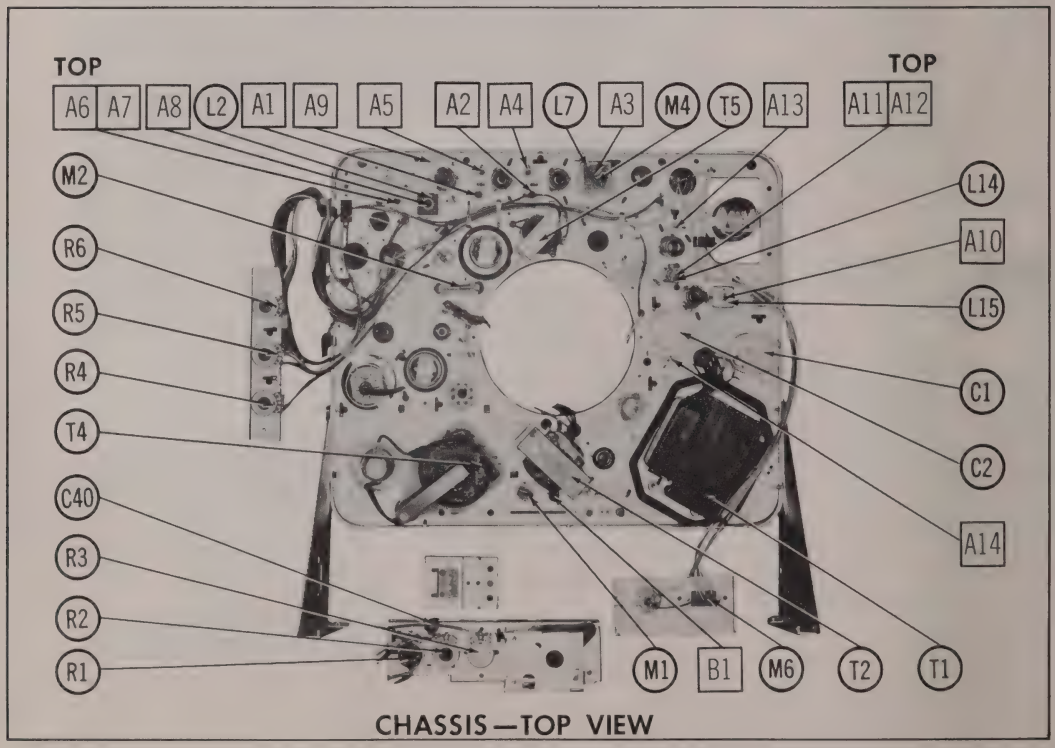
* FOCUS POINTS

CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Set the Horizontal Hold Control to the center of its range. Adjust the Horizontal Frequency Slug (B1) until the picture synchronizes horizontally. Keep turning B1 in the same direction until the picture just falls out of sync. Reverse the direction of rotation until the picture just falls into sync. Rotate the Horizontal Hold Control to both extreme ends of rotation. The picture should either stay in sync at both ends of rotation or should fall out of sync by an equal number of bars at each end. If neither of these conditions occur, repeat procedure.

Adjust the Width Control for a picture slightly wider than necessary to fill the picture mask horizontally.



CHASSIS—TOP VIEW

PHOTOFACT® Folder

OLYMPIC MODELS CRW212B, M, TRW203B, M (Ch. JRW)

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

OLYMPIC MODELS CRW212B, M, TRW203B, M (Ch. JRW)

MODEL TRW203M (CH. JRW)

OLYMPIC MODELS CRW212B, M, TRW203B, M (Ch. JRW)

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 6 push-on type knobs from front of cabinet.
2. Remove 1 screw holding front tuner escutcheon. Remove 3 push-on type knobs now visible.
3. Remove 1 wood screw and 1 metal screw holding rear cover. Remove rear cover.
4. Remove speaker leads, picture tube socket, yoke plug, 2 remote control sockets, and the hi voltage lead.
5. Remove 1 wood screw at top and 2 at bottom of chassis.
6. Remove TV chassis.
7. Remote Control Receiver Chassis is held to cabinet by 2 chassis bolts.

PICTURE TUBE REMOVAL

1. Remove TV Chassis and Remote Control Receiver Chassis.
2. Remove 1 bolt at the top and 2 at the bottom of picture tube mounting bracket.
3. Remove picture tube.

MODEL TRW203M (CH. JRW)

TRADE NAME	Olympic Models CRW212B, CRW212M, TRW203B, TRW203M (Chassis JRW)
MANUFACTURER	Olympic Radio & Television Inc., Div. of the Siegler Corp., 34-01 38th Ave., Long Island City 1, N. Y.
TYPE SET	Television Receiver (With Remote Control)
TUBES	TV: VHF - Fifteen Remote Control Receiver: Four
TRANSISTOR	Remote Control Transmitter: One
POWER SUPPLY	110-120 Volts AC, 60 Cycle
RATING	TV & Remote: 225 Watts, 2.3 Amp. @ 117 Volts AC (While Tuning)
	TV & Remote: 170 Watts, 1.65 Amp. @ 117 Volts AC (Not Tuning)
	TV Only: 150 Watts, 1.4 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

Remove 4 screws holding the trim strip at the top edge of the safety glass. Tilt glass out and remove.

FUSE

A 3 amp. fuse is used for low voltage power supply protection. (For location, see M5 in photo "High Voltage Compartment" page 20.)
A .5 amp. fuse is used for horizontal sweep protection. (For location, see M4 in photo "TV Chassis - Top View".)
A fuse wire is used for filament protection. (For location, see M6 in photo "TV Chassis - Bottom View".)

TUNER OSCILLATOR ADJUSTMENTS

To touch up the VHF Oscillator, it is necessary to remove Channel Selector and Fine Tuning Knobs, Front Tuner Escutcheon, and Channel Indicator.

AGC

The AGC may be varied by means of a Range Switch. (For location, see "Tube Placement Chart".)

FOCUS

The focus may be varied by connecting the lead from pin 4 of the picture tube to various voltage points. (For location, see photo "Cabinet - Rear View".)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the Horizontal Hold is accomplished by the proper setting of the Horizontal Frequency Slug. (For location, see "Tube Placement Chart".)

HORIZONTAL DRIVE

The horizontal drive may be varied by a Horizontal Drive Trimmer (Horiz. Size). (For location, see "Tube Placement Chart".)

BUZZ ADJUSTMENT

To eliminate intercarrier buzz, adjust the Sound Clarifier for MINIMUM Buzz and maximum Sound. (For location, see "Tube Placement Chart".)

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

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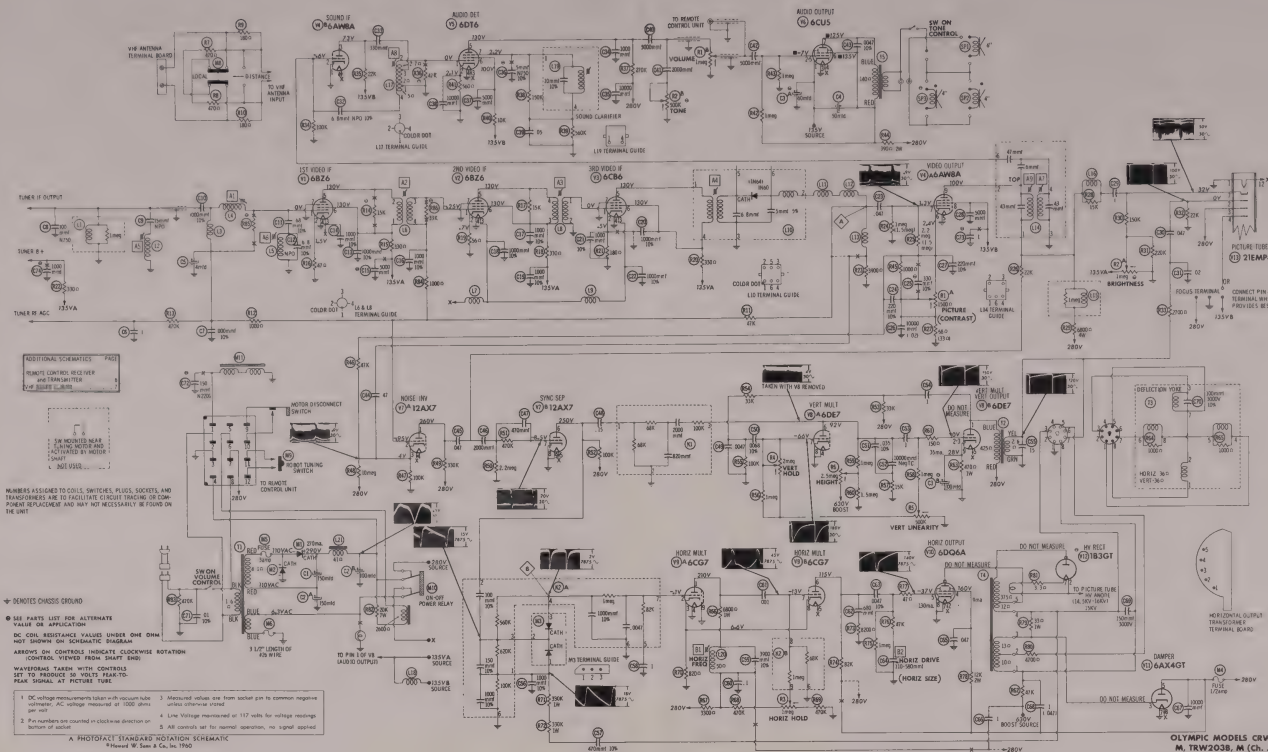
JA944

OLYMPIC MODELS CRW212B, M, TRW203B, M (Ch. JRW)

SET 508 FOLDER 2


OLYMPIC MODELS CRW212B, M, TRW203B, M (Ch. JRW)
FOLDER 2
PAGE 2
PAGE 19
OLYMPIC MODELS CRW212B, M, TRW203B, M (Ch. JRW)
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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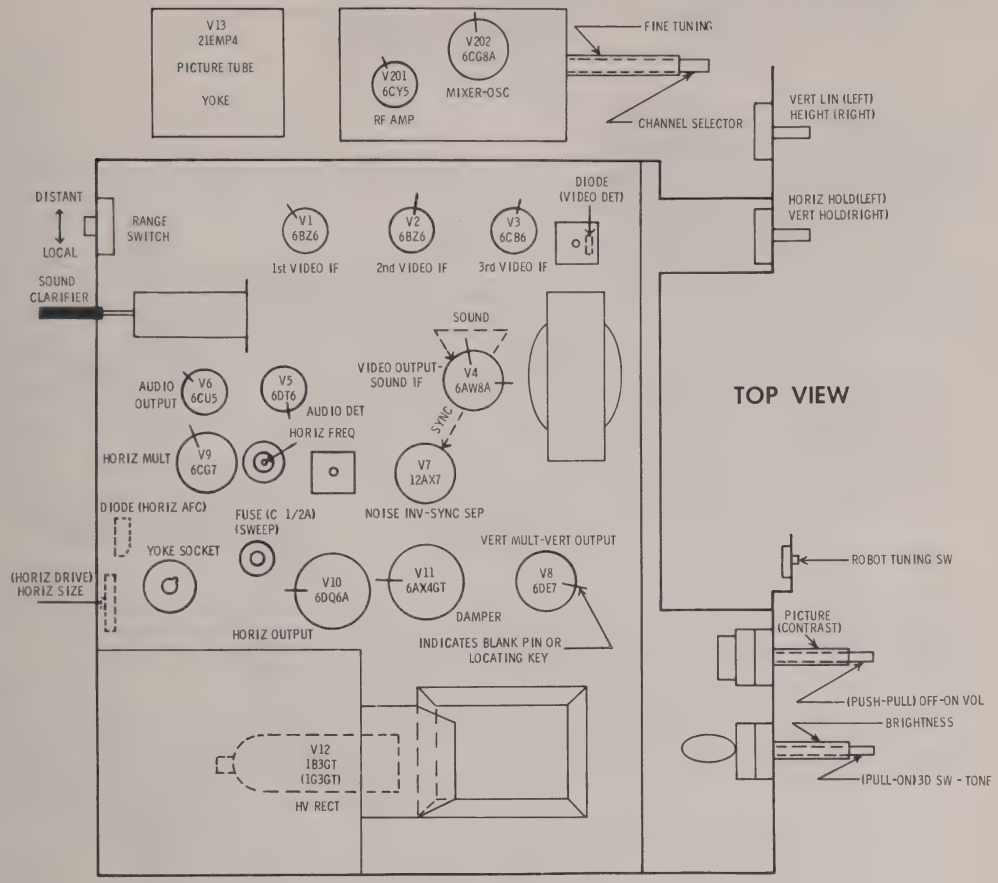
DENOTES CHASSIS GROUND
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 30 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT
ADDITIONAL SCHEMATICS
REMOTE CONTROL RECEIVER and TRANSMITTER
TV-FM RADIO CHASSIS
SW MOUNTED NEAR CENTER OF MOTOR AND ACTUATED BY MOTOR SHAFT
NOT USED
MOTOR DISCONNECT SWITCH
TO REMOTE CONTROL UNIT
RC-807 TUNING SWITCH
ON-OFF POWER RELAY
SW ON VOLUME CONTROL
3 1/2" LENGTH OF #26 WIRE
TO PIN 1 OF V8 (AUD IO OUTPUT)
135VA SOURCE
135VB SOURCE
280V SOURCE
TO VHF ANTENNA TERMINAL BOARD
TO VHF ANTENNA INPUT
LOCAL
DISTANCE
SOUND IF
AUDIO DET
AUDIO OUTPUT
TO REMOTE CONTROL UNIT
VOLUME
SOUND CLARIFIER
SW ON TONE CONTROLS
TUNER IF OUTPUT
TUNER B+
TUNER RF AGC
1ST VIDEO IF
2ND VIDEO IF
3RD VIDEO IF
VIDEO OUTPUT
PICTURE (CONTRAST)
BRIGHTNESS
FOCUS TERMINAL
CONNECT PIN 6 TO TERMINAL WHICH PROVIDES BEST FOCUS.
PICTURE TUBE
21EMP4
COLOR DOT
L6 & L8 TERMINAL GUIDE
L10 TERMINAL GUIDE
L34 TERMINAL GUIDE
NOISE INV
SYNC SEP
VERT MULT
VERT OUTPUT
DEFLECTION YOKE
HORIZ 30
VERT 36
VERT HOLD
HEIGHT
VERT LINEARITY
HORIZ MULT
HORIZ OUTPUT
HORIZ FREQ
HORIZ HOLD
HORIZ DRIVE
(HORIZ SIZE)
HV RECT
TO PICTURE TUBE
HV ANODE (14.5KV-16KV)
HORIZONTAL OUTPUT TRANSFORMER TERMINAL BOARD
DAMPER
DO NOT MEASURE
TAKEN WITH V8 REMOVED
M1 TERMINAL GUIDE
L10 TERMINAL GUIDE
1 DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1000 ohms per volt.
2 Pin numbers are counted in clockwise direction on bottom of socket.
3 Measured values are from socket pin to common negative unless otherwise stated.
4 Line Voltage maintained at 117 volts for voltage readings.
5 All controls set for normal operation, no signal applied.

TUBE PLACEMENT CHART



OLYMPIC MODELS CRW212B, M, TRW203B, M (Ch. JRW)

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound Fuse (LV Power), Fuse Wire (Filament), Rectifiers (B+)

SWEEP FAILURE
No raster, has sound V9, V10, V11, V12, Fuse (Sweep), V13
No vertical deflection V8
Poor vert. linearity or foldover V8
Poor horiz. linearity or foldover V9, V10, V11
Narrow picture V9, V10, V11, Rectifiers (B+)
Vert. off freq. V8
Horiz. off freq. Diodes (Horiz. AFC), V9

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, V3, Diode (Video Det.), V4
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V4, V13
Has pic, no sound V4, V5, V6

SYNC FAILURE
No vert. sync V7
No horiz. sync V7
No vert. or horiz. sync V7

FOLDER 2

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

The High Voltage Lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools:
A1 thru A7, A9 ..... GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
Mixer Plate Coil ..... GENERAL CEMENT #9296, 9297
WALSCO #2546, 2547
A8 ..... GENERAL CEMENT #8721, 8722
WALSCO #2519

VIDEO IF ALIGNMENT

Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic inpedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	High side to ungrounded tube shield floating over Mixer-Osc. Low side to chassis.	Not Used	44.25MC (Unmod.)	Any non-interfering channel	Use VTVM DC probe to point (A). Common to chassis. (Across Video Det. Load.)	Mixer Plate Coil & A1	Adjust for maximum deflection.
2.	"	"	42.75MC	"	"	A2	"
3.	"	"	45.5MC	"	"	A3	"
4.	"	"	42.25MC	"	"	A4	"
5.	"	"	47.5MC	"	"	A5, A6	Adjust for MINIMUM deflection.
6.	"	44MC (10MC Swp.)	42.25MC 45.5MC	"	Vert. Amp. thru 27K to point (A). Low side to chassis. (Across Video Det. Load.)		Check for response similar to Fig. 1. If necessary, retouch A1 thru A4 and Mixer Plate Coil to obtain desired response.

SOUND IF ALIGNMENT

Turn the set on and tune in a strong TV signal.. Adjust the Sound Clarifier for maximum volume. Disconnect the antenna and if necessary, insert an attenuator in series with the antenna to provide a weak signal. Adjust A7 and A8 for maximum volume. (A weak signal is necessary to make the peaks distinguishable). Reconnect the antenna directly for a strong signal and retouch the Sound Clarifier for maximum undistorted sound.

4.5MC TRAP ALIGNMENT

Tune in a strong TV signal and set Contrast at maximum. Adjust the Fine Tuning until a beat pattern is visible. Adjust A9 for MINIMUM beat interference.

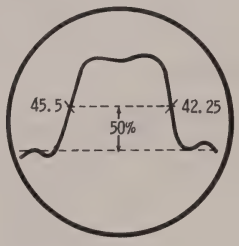
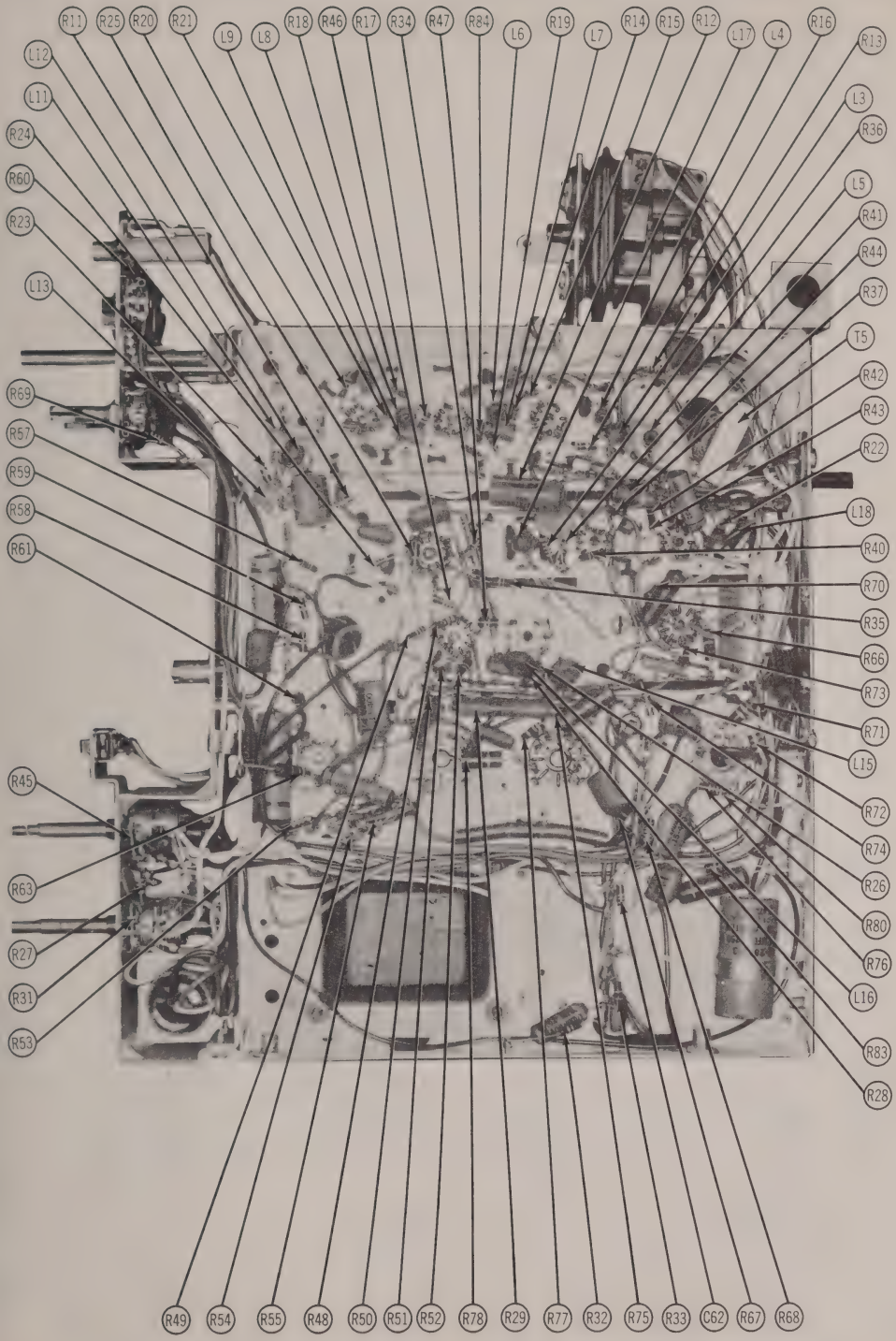


FIG.1

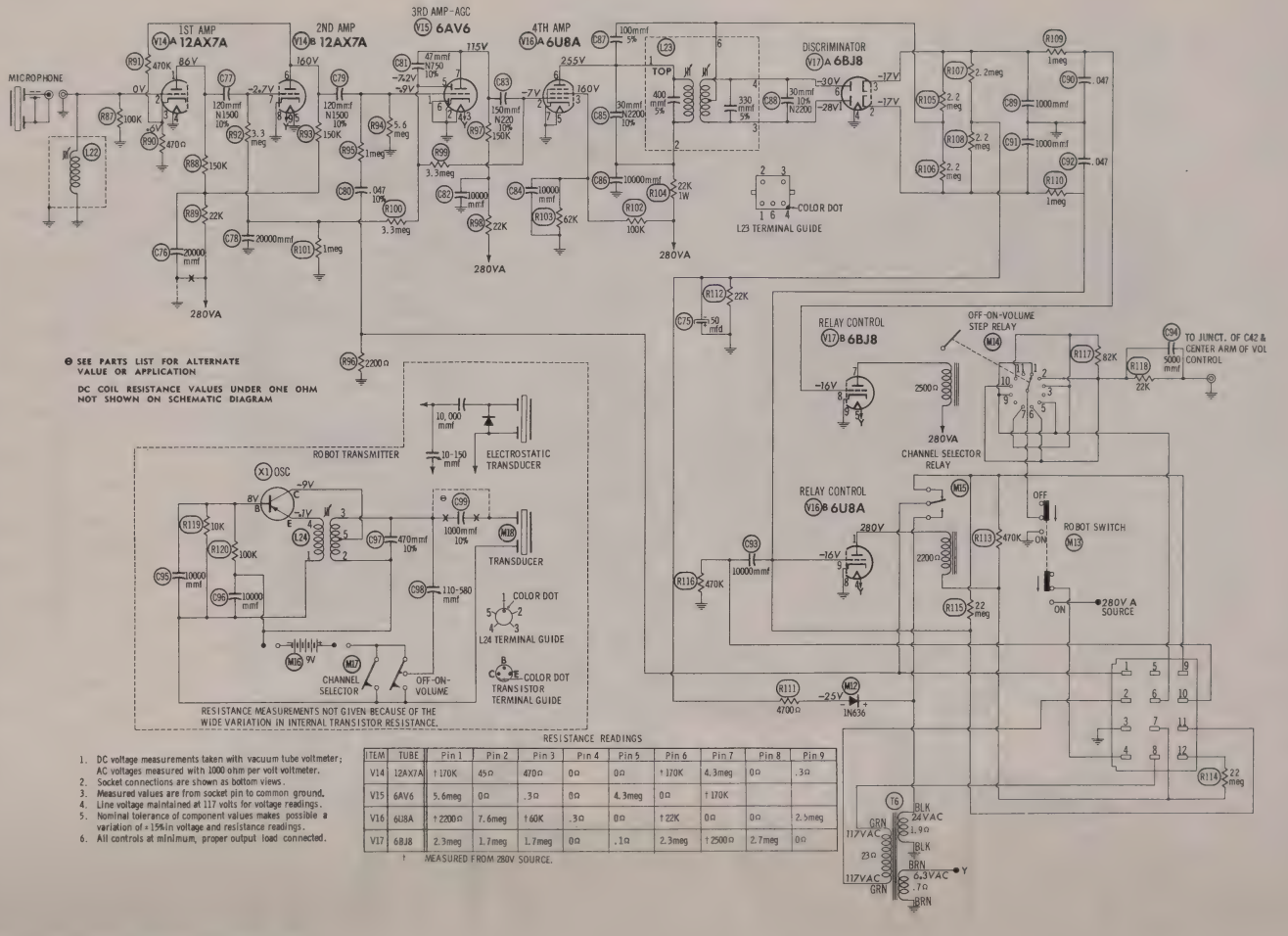
VHF TUNER ALIGNMENT INSTRUCTIONS PAGE 13

REMOTE CONTROL RECEIVER ALIGNMENT INSTRUCTIONS PAGE 14



TV CHASSIS BOTTOM VIEW - RESISTOR & INDUCTOR IDENT.

SET 508 FOLDER 2



⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V14	12AX7A	†170K	45Ω	470Ω	0Ω	0Ω	†170K	4.3meg	0Ω	.3Ω
V15	6AV6	5.6meg	0Ω	.3Ω	0Ω	4.3meg	0Ω	†170K		
V16	6U8A	†2200Ω	7.6meg	†60K	.3Ω	0Ω	†22K	0Ω	0Ω	2.5meg
V17	6BJ8	2.3meg	1.7meg	1.7meg	0Ω	.1Ω	2.3meg	†2500Ω	2.7meg	0Ω

† MEASURED FROM 280V SOURCE.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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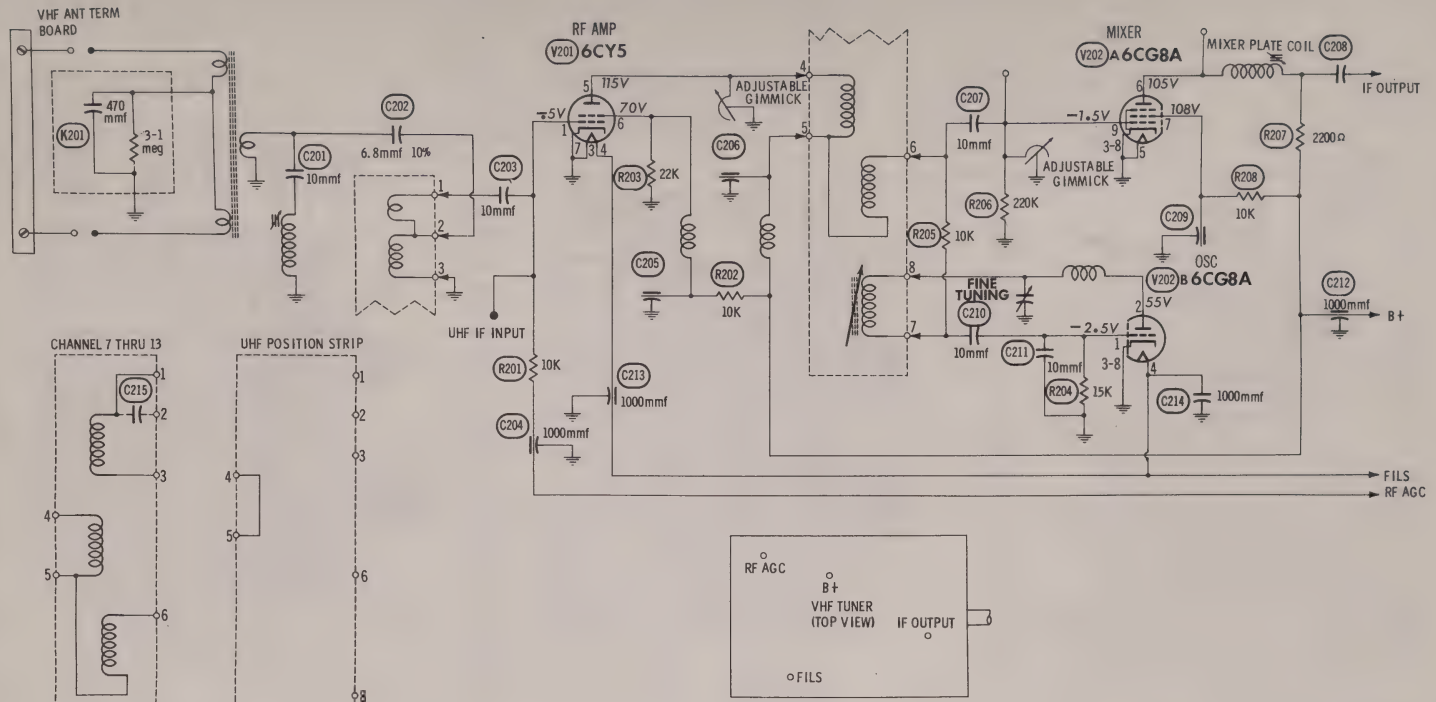
REMOTE CONTROL RECEIVER & TRANSMITTER



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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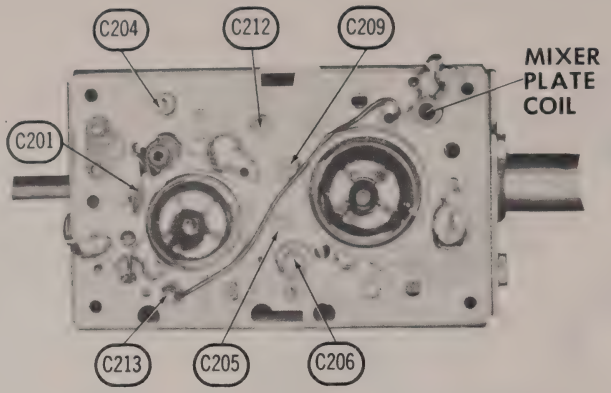
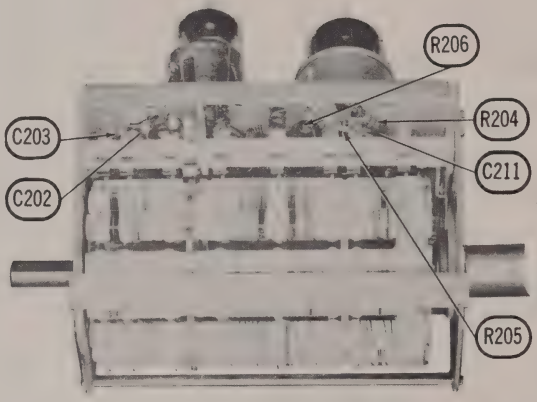
VHF TUNER CL26707

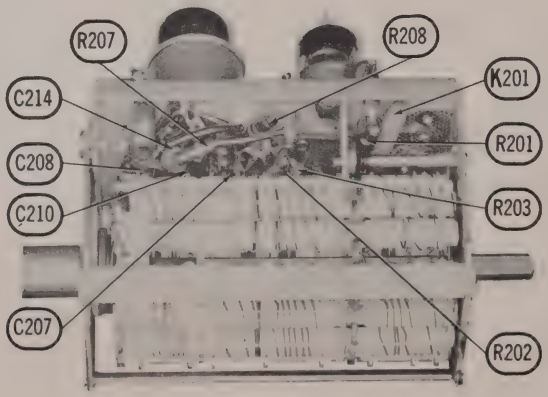
OLYMPIC MODELS CRW212B, M, TRW203B, M (Ch. JRW)



VHF TUNER CL26707 - TOP VIEW



VHF TUNER CL26707 - LEFT SIDE



VHF TUNER CL26707 - RIGHT SIDE

TV PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC •		RAYTHEON • SYLVANIA •			
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	1st Video IF Amp.	6BZ6	V7	Noise Inv. - Sync Sep.	12AX7
V2	2nd Video IF Amp.	6BZ6	V8	Vert. Mult. - Vert. Output	6DE7
V3	3rd Video IF Amp.	6CB6	V9	Horiz. Mult.	6CG7
V4	Video Output - Sound IF	6AW8A	V10	Horiz. Output	6DQ6A
V5	Audio Det.	6DT6	V11	Damper	6AX4GT
V6	Audio Output	6CU5	V12	HV Rectifier	1B3GT (IG3GT) *

* Alternate

PICTURE TUBE

ITEM No.	REPLACEMENT DATA					NOTES
	OLYMPIC PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
V13	21EMP4		21EMP4 ①			① Aluminized

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	OLYMPIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	150	200	CO26294	PR1-100		WS427	TD-150-300	TVAS-1447 *	
C2A	150	250	CO26299	PR2-790	BBRD0286	WD425	CDB-D-1014	TVAS-2590 *	
B	100	350							
C3A	60	200	CO26634	PR3-065	BBRD-0576	TCD2302		TVAS-3640 *	①
B	100	25			BR2035	TC2501			
C	20	350							
C4	50	250	CO2068-3	PRS1585	BR5025	TC59	TD-50-450	TVA-1713	
C5	4	50	CO2756	PRS1400	BBR4-50	TT50X4	TD-4-50	TVA-1402	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
① C3C not used. Some versions may use 2 section unit, 60mfd @ 200V, 100mfd @ 25V (Pt. #CO26300).

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1
C7	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C8	100 N750		N750-DI 100	DTN-101	C10T1U	CCTN-101	CN7-310	10TCU-T10
C9	15 NPO		NPO-DI 15	DTZ-15	C10Q15C	CCTO-150	CNO-415	10TCC-Q15
C10	1000 10%		DI-1000	DD-102	1R5D1	CCD-102	GP210	10TS-D10
C11	.68 10%		NPO-SI .68	TCZ-R68				
C12	6.8 NPO 10%		NPO-DI 6.8	DTZ-6R8	C10V68C	CCTO-6R8	CNO-568	10TCC-V68
C13	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C14	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C15	5000	Note 1	BPD-005	DD-502	BYA10D5	CCD-502	GP250	5HK-D50
C16	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C17	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C18	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C19	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C20	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C21	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C23	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C23	.047 400V		P488N-047	DD-473	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C24	220 10%		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C25	330 10%	Note 1	DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C26	10000	(.02mfd) †	BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C27	220 10%		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C28	5000		BPD-005	DD-502	BYA10D5	CCD-502	GP250	5HK-D50
C29	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1
C30	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C31	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S2
C32	6.8 NPO 10%		NPO-DI 6.8	DTZ-6R8	C10V68C	CCTO-6R8	CNO-568	10TCC-V68
C33	330		BPD-00033	DD-331	L10T33	CCD-331	GP333	10TS-T33
C34	1000		BPD-001	DD-102	BYA10D1	CCD-102	GP210	5HK-D10
C35	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C36	5 N750 10%	Note 1		DTN-5	C10V5U	CCTN-4R7	CN7-550	10TCU-V50
C37	5000		BPD-005	DD-502	BYA10D5	CCD-502	GP250	5HK-D50
C38	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C39	.05 50V		P288N-05	DDA-503	H-05S5	1DP-2-503	BT-150	TG-S50
C40	5000		BPD-005	DD-503	BYA10D5	CCD-502	GP250	5HK-D50
C41	2000		BPD-002	DD-202	BYA10D2	CCD-202	GP220	5HK-D20
C42	5000		BPD-005	DD-502	BYA10D5	CCD-502	GP250	5HK-D50
C43	.0047 600V 10%		V84C6D47-10%		PM6D47	6DP-1-472	GEM-16247	6TM-D47
C44	.47 200V		P288N-47		CUB2P47	2DP-5-474	GEM-2047	2TM-P47
C45	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C46	2000		BPD-002	DD-202	BYA10D2	CCD-202	GP220	5HK-D20
C47	470		BPD-00047	DD-471	BYA10T47	CCD-471	GP347	10TS-T47
C48	.15 400V		P488N-15		CUB4P15	4DP-4-154	GEM-4015	4TM-P15
C49	.0047 600V		P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C50	.0068 600V 10%		V84C6D68-10%		PM6D68	6DP-1-682	GEM-16268	6TM-D68
C51	.035 600V 10%	Pt. #CO-O-6353K						6TM-S35
C52	10000 Neg. T. C.	Pt. #CO5819						
C53	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1
C54	.1 600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P1
C55	.15 400V		P488N-15		CUB4P15	4DP-4-154	GEM-4015	4TM-P15
C56	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C57	470 10%		DI-470	DD-471	5R5T47	CCD-471	GP347	10TS-T47
C58	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1
C59	3900 10%		1464-0039		1R5D39	CM-20B-392K	MCJ462.5	MS-239
C60	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1
C61	.001 600V		P688N-001	D6-102	CUB6D1	6DP-1-102	GEM-621	6TM-D1
C62	680		1468-00068	DD-681	1R5T68	CM-19B-681M	MCJ249	MS-368
C63	.0047 600V 10%		V84C6D47-10%		PM6D47	6DP-1-472	GEM-16247	6TM-D47
C64	110-580	Pt. #CT3526				487		
C65	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C66	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1
C67	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10

TV PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING		REMARKS	REPLACEMENT DATA: ARROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C69	1	400V				DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1
C69	150	3000V				DCD-151	HVB3D7.5	DCD-151	84V-315	30GA-Z15
C70	100	3000V	10%						32DY-310	
C71	01	600V	10%	V64C68-10P6		P6858		6DP-3-103	GEM-601	6TM-S
C72	150	N3300	Note 1					"		30TCY-T15
C73	1	400V	Note 1	P4889-1		DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1
C74	.1	1000mmf	Note 1							

† Alternate Value. Note 1. May not be used in some versions.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: OLYMPIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS—IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1 Meg		PT38560					Picture (Contrast)
B	Integ				RTV-686	QU-1343	■UE236-S	Volume
C	Switch							Push-Pull, Off-On
R2A	Integ		PT38738					Brightness Note 1
B	500K							Tone
C	Switch							Push-Pull, 3D
R3A	Integ		PT38439	B-89	A47-Integ-S	QU-137	U54	Horiz. Hold
B	Shaft			Not Req.	RSS-3	Not Req.	Not Req.	
R4A	2Integ		PT38438	B-75	A47-Integ-S	QU-139	U56	Vert. Hold
B	Shaft			Not Req.	RSS-3	Not Req.	Not Req.	
R5A	500K		PT38790	RE-49	B47-500K-S	RU-133	PTA551-	Vert. Linearity
B	Switch			Not Req.	Not Req.	TM4	Not Req.	
R6A	1.5meg		PT39008-1	RE-88	B47-1.5meg-S	QU-339	TA3551-	Vert. Height
B	Shaft			Not Req.	Not Req.		Not Req.	

Note 1. Some versions may use 1.5meg in this application.
† "CONCENTRIKIT" Equivalent: K-16 Kit with Base Elements and Shafts: B17-109, P13-116
(Not available as a factory assembled unit). B13-137, R35-209
■ "ITA-LOC" Equivalent: FA152R, RUP18A, OS300.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R7	470Ω	
R8	470Ω	
R9	180Ω	
R10	180Ω	
R11	47K	
R13	1000Ω	
R33	2.7K	
R34	18K	Note 1
R35	330Ω	
R36	47Ω	
R37	18K	
R38	330Ω	
R39	330Ω	
R40	330Ω	
R41	330Ω	
R42	330Ω	
R43	3300Ω	
R44	1.5meg	1meg *
R45	2.2K	1.5meg *
R46	22K	
R47	680	33Ω *
R48	15K	
R49	5600Ω 4W	Tr. #RE5653
R50	150K	(IRC #WS-68000)
R51	220K	
R53	33K	
R53	3700Ω	

ITEM No.	RATING	REMARKS
R54	100K	
R55	22K	
R56	47K	Note 1
R57	270K	
R58	150K	
R59	560K	
R60	47K	
R61	100K	
R62	10meg	
R63	330K	
R64	2.5meg	
R81	470K	
R82	33K	
R83	33K	
R84	33K	
R85	100K	
R86	100K	
R87	15K	
R88	47K	
R89	1meg	
R90	1.5meg	
R91	15M	

ITEM No.	RATING	REMARKS
R92	47K	
R93	4700 1W	
R94	1000Ω	
R95	1800Ω	
R96	6800Ω 1W	
R97	3300Ω	
R98	470K	
R99	470K	
R70	820Ω	
R71	330K 1W	
R72	330K 1W	
R73	8200Ω	
R74	82K	
R75	1meg	
R76	47K	
R77	47Ω	
R78	2.2meg	
R79	33Ω 1W	
R80	4700Ω	
R81	3.3meg	
R82	10K 7W	Pt. #RE28529 (IRC #PWH9-20KΩ
R83	470K	
R84	100Ω	Note 1
R85	33K	Note 1
R86	33K	Note 1

* Alternate Value. Note 1. May not be used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: OLYMPIC PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	RF Choke	CL38478 ①				① Wound on 1meg resistor.
L2	4.5MC Trap	CL38545	TV-153	6125	RTC-8556	30uh
L3	Shunt Peaking	CL3535	TV-180	6176	RTC-8593	
L4	1st Video IF	CL38548	TV-151	6158	RTC-8625	
L5	4.7 SMC Trap	CL4753	TV-153	6125	RTC-8556	
L6	2nd Video IF	CL4811	TV-130	6210	RTC-8551	
L7	Fil. Choke	CL3427	BC-562	4604	RTC-8516	1.5uh
L8	3rd Video IF	CL4811	TV-130	6210	RTC-8551	
L9	Fil. Choke	CL3427	BC-562	4604	RTC-8516	1.5uh
L10A	4th Video IF	CL38518 ②				② Includes Complete Assembly.
B	RF Choke		BC-565	4609	RTC-8519	5.6uh
L11	RF Choke	CK4325	BC-563	4604	RTC-8516	1.7uh
L12	Series Peaking	CL38435	TV-194	6121	RTC-8574	110uh
L13	Shunt Peaking	CL38436	TV-195	6120	RTC-8575	180uh
L14A	4.5MC Trap	TR3386-1				
B	1st Sound IF					
L15	Shunt Peaking	CL3514 ①	TV-203 *	6176 *	RTC-8592 *	500uh * Parallel with 1meg resistor.
L16	Series Peaking	CL3405	TV-180	6176	RTC-8593	200uh
L17	2nd Sound IF	CL4521				
L18	RT Choke	CK3405	BC-565	4610	RTC-8520	6.8uh
L19	Quadrature Coil	CL3603-1	TV-134	1681	RTC-8606	

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: OLYMPIC PART No.	Merit PART No.	Miller PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L20	Horiz. Stabilizer	CL3464-1	TV-163	6210	RC110	RTC-8622	H2-5	WLC-25

FILTER CHOKE

ITEM No.	RATINGS: CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~'s)	REPLACEMENT DATA: OLYMPIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L21	270A	41Ω	55 Hy.	CK-36651		C-1343 ①		C-36X	① Drill new mounting hole.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	SEC.	REPLACEMENT DATA: OLYMPIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V @ 1.4A	410V @ .840A & 6.3V @ 8A	TR36124					

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: OLYMPIC PART No.	Merit PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	Vert. Output	TR36206	A-2815 ①	V034	VO-109 ①	28S72	A-10EX	
T3	Yoke-Horiz. (20MH) (10°)-Vert. (59MH) Rear Cover and Centering Device Yoke Clamp	CL28S25				28S72 Y-53 ②, ③	Y-54-1	
		PP28321					YC-110	
T4	Horiz. Output	SP26596 TR28305-1	HVO-171					

① Use 8 to 1 turns ratio. ② Use original rear cover and centering device. ③ Use original yoke plug. Connect yoke terminal #5 to yoke plug pin #2; yoke #6 & #3 to plug #5; yoke #7 to plug #6; yoke #4 to plug #; yoke #8 to plug #7.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE: PRI.	SEC.	REPLACEMENT DATA: OLYMPIC PART No.	Merit PART No.	Stancor PART No.	Triad PART No.	NOTES
T5	2000Ω	3-4Ω	TR7166-1B	A-3025	A-3332	S-82X	

SPEAKER

ITEM No.	TYPE: SIZE	FIELD	V C	IMP	REPLACEMENT DATA: OLYMPIC PART No.	QUAM PART No.	NOTES
SP1	4"	PM		3-4Ω	SK38564	4A1	* May be used in some versions.
SP2	4"	PM		3-4Ω	SK4343	4A0TH	
SP3	4"	PM		3-4Ω	SK4342	4A0TH	
	4"	PM		3-4Ω	SK3788-2 *	4A0T	
	3½"	PM		3-4Ω	SK38463 *	3A1ST*	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	OLYMPIC PART No.	REPLACEMENT DATA
K1	Vert. Integrator	820mmf, 2000mmf, 68K, 68K, 100K	PC38048	Centralab PC-368
K2	Horiz. AFC & Mult.	100mmf, 150mmf, 1000mmf, 1000mmf, 4700mmf, 68K, 82K, 100K, 180K, 820K, 1meg, 1meg	PC38716	Centralab PC-367

RECTIFIERS

ITEM No.	RATING: CURRENT (Measured)	REPLACEMENT DATA: OLYMPIC PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	270A	RT26325 *		1N1763 *	40K *	SR330 *	* Silicon
M2	270A	RT26325 *		1N1763 *	40K *	SR500 *	a Dual Selenium
M3		RT5663 a	60CI a				

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: OLYMPIC PART No. FUSE	OLYMPIC PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M4	C	1/2A 250V	FU26303	FH4344	312.500 (C 1/2A 250V)	3480003	C 1/2	HC 3/10 to 1/2
M5	3AG	3A 250V	FU38647		318003 (3AG 3A 250V P/T)		GJV3	
M6	3 1/2"	length of #26 wire						

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M7	Tuner	CL38707	VHF
M8	Switch	RW2906-1	Local-Distant (DPDT Slide Type)
M9	Switch	RW38720	Robot Tuning (SPST, Momentary)
M10	Relay	RL26585	Off-On Power
M11	Power Tuning Ass'y		Includes Switches, Motor, Relay

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Safety Glass	PP3956-1	
Mask	PP3946-3	
Knob	KN28184 *	Channel Selector
Knob	KN28971 *	Fine Tuning
Knob	KN28365 *	Dial

CABINETS & CABINET PARTS (cont)

NAME	PART NO	DESCRIPTION
Knob	KN28773 *	Brightness, Contrast
Knob	KN28272 *	Vertical Hold
Knob	KN28272 *	Horizontal Hold
Knob	KN28778 *	3D Tone
Knob	KN28273 *	Volume Off-On
Cabinet	CAB2775 *	Model TRW2123
Cabinet	CAB2777 *	Model CRW2121

WIRING DATA

High Voltage Lead	Use BELDEN No. 8888
Shielded Hook-up Wire	Use BELDEN No. 8845 (Single Conductor) 8716 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8486 (Round) - 6 Conductor 8488 (Round) - 8 Conductor

REMOTE CONTROL RECEIVER PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	* GENERAL ELECTRIC * USE	TYPE	ITEM No.	* RAYTHEON * SYLVANIA * USE	TYPE
V14	1st - 2nd Amp.	12AX7A	V17	Discriminator - Off-On	
V15	3rd Amp. - AGC Rect.	6AV6		Volume Step Relay Control	6BJ8
V16	4th Amp. - Channel Relay Control	6U8A			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP.	VOLT.	REPLACEMENT DATA: OLYMPIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C75	50	25	CO808	PSH1265	BSH50-25	TC39	TD-50-25	TVA-1306	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C76	20000		BPD-03	DD-303	BYH3D3	CCD-303	GPI30	84K-I30
C77	130 N500 10%					*		
C78	20000		BPD-03	DD-303	BYH3D3	CCD-303	GPI30	84K-I30
C79	130 N500 10%					*		
C80	.047 400V 10%		V64C4047-10P5	P6848-7		CCD-3-473	GTM-18147	47M-M47
C81	47 N750 10%		DTN-47	C20G47U		CCTO-470	C3T-447	10TCU-Q47
C82	10000		BPD-01	DD-103	BYA10B	CCD-103	GPI10	84K-I80
C83	180 N330 10%					*		10TCR-T15
C84	10000		BPD-01	DD-103	BYA10B	CCD-103	GPI10	84K-I80
C85	30 N2200 10%					*		
C86	10000		BPD-01	DD-103	BYA10B	CCD-103	GPI10	84K-I80
C87	100	5%	1469-0001	TCZ-100	28S51	CM-1H9-101J	MCE336	M5-31
C88	30	N2200 10%				*		
C89	1000		BPD-001	DD-102	BYA10D1	CCD-102	GPI20	84K-D80
C90	.047 200V		P2S3N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	47M-S47
C91	1000		BPD-001	DD-101	BYA10D8	CCD-102	GPI20	84K-D80
C92	.047 200V		P2S3N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	47M-S47
C93	1000		BPD-001	DD-101	BYA10D8	CCD-102	GPI20	84K-D80
C94	5000		BPD-005	DD-501	BYA10D5	CCD-502	GPI50	84K-D50

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R87	100K	
R88	180K	
R89	22K	
R90	47K	
R91	470K	
R92	3.3meg	
R93	150K	
R94	10meg	
R95	5.6meg	
R96	2200Ω	
R97	150K	

ITEM No.	RATING	REMARKS
R98	22K	
R99	3.3meg	
R100	3.3meg	
R101	10meg	
R102	62K 1W	
R103	100K	
R104	22K 1W	
R105	2.2meg	
R106	2.2meg	
R107	2.2meg	
R108	2.2meg	

ITEM No.	RATING	REMARKS
R109	1meg	
R110	1meg	
R111	4700Ω	
R112	22K	
R113	470K	
R114	22meg	
R115	22meg	
R116	470K	
R117	82K	
R118	22K	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: OLYMPIC PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L22	Input Coil	CL26689				
L23	Discriminator	TR26690				

OLYMPIC MODELS CRW2128, M, TRW2038, M (CH. JRW)

FOLDER 2

REMOTE CONTROL RECEIVER (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	OLYMPIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T6	117V @ .25A	24VAC	6.3V @ 1.1A	TR26691					

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		OLYMPIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M12	1N636 or 1N64		1N295 1N64	1N636 1N64	Bias, (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M13	Switch	SW2966-1	Off-On (DPDT Slide Type)
M14	Relay	RL26686	Off-On-Volume
M15	Relay	RL26687	Channel Selector

REMOTE CONTROL TRANSMITTER PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	TN-26912*	Oscillator				PNP * Olympic Part Number

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C95	10000			BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C96	10000			BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C97	470	10%		1469-00047		5R5T47	CM-19B-471K	MCJ244	MS-347
C98	110-580		Pt. #CT3526				487		
C99	1000	10%	Note 1	DI-1000	DD-102	1R5D1	CCD-102	GP210	10TS-D10

Note 1. May not be used in some versions.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R119	10K	

ITEM No.	RATING	REMARKS
R120	100K	

ITEM No.	RATING	REMARKS

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		OLYMPIC PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L24	Osc. Coil	CL26836				

BATTERIES

ITEM No.	VOLTAGE	OLYMPIC PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M16	9V	BT26839		2U6		216		M-1604	

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M17 M18	Switch Transducer	MK26688-1	Spring Contact, Volume, Channel Selector

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	KN26959	
Case	CA26951	

TUNER PARTS LIST AND DESCRIPTIONS

CL26707

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp.	6CY5	V202	Mixer - Osc.	6CG8A

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C202	6.8 10%		NPO-SI 6.8	DTZ-6R8	C10V68C	CCTO-6R8	CNO-568	10TCC-V68
C203	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C204	1000		EF-001	MFT-1000		CCF-102	CT280A	
C205								
C206								
C207	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C208								
C209								
C210	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C211	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C212	1000		EF-001	MFT-1000		CCF-102	CT280A	
C213	1000		EF-001	MFT-1000		CCF-102	CT280A	
C214	1000		BPD-001	DD-102	BYA10D1	CCD-102	GP210	5HK-D10
C215								

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS
R201	10K		R204	15K		R207	2200Ω	
R202	10K		R205	10K		R208	10K	
R203	22K		R206	220K				

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	OLYMPIC PART No.	REPLACEMENT DATA
K201	Antenna Filter	470mmf, 3-1meg		Centralab RC-471 Sprague AC1-1

TUNER ALIGNMENT INSTRUCTIONS

TUNER ALIGNMENT

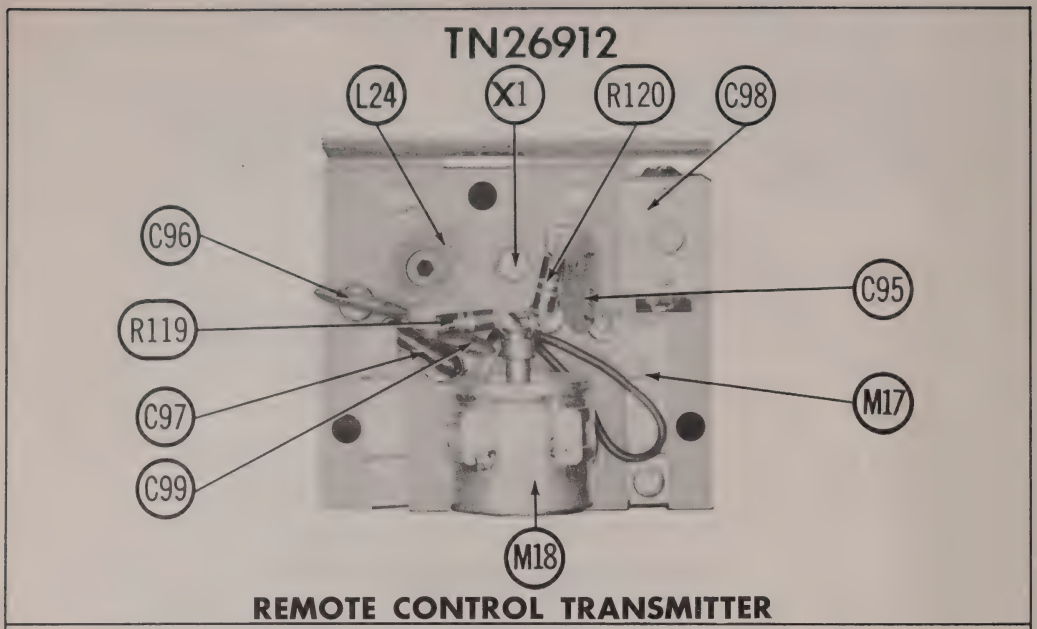
Suggested Alignment Tools: GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

VHF OSCILLATOR ALIGNMENT

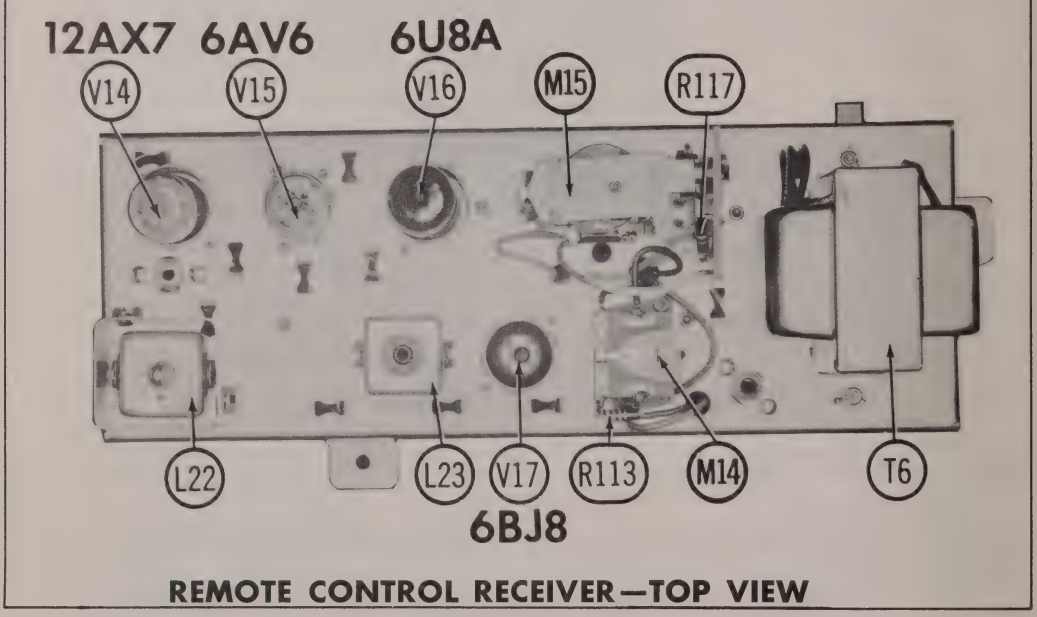
The individual channel adjustment screws are accessible one at a time, thru a hole in the front of the tuner, as the Channel Selector is rotated. Set the Fine Tuning to the center of its range and switch to channel to be adjusted and adjust for best picture and sound.

VHF RF AND MIXER ALIGNMENT

This portion of the tuner has been properly aligned at the factory and is very stable. Alignment of this portion should not be attempted in the field.



REMOTE CONTROL TRANSMITTER

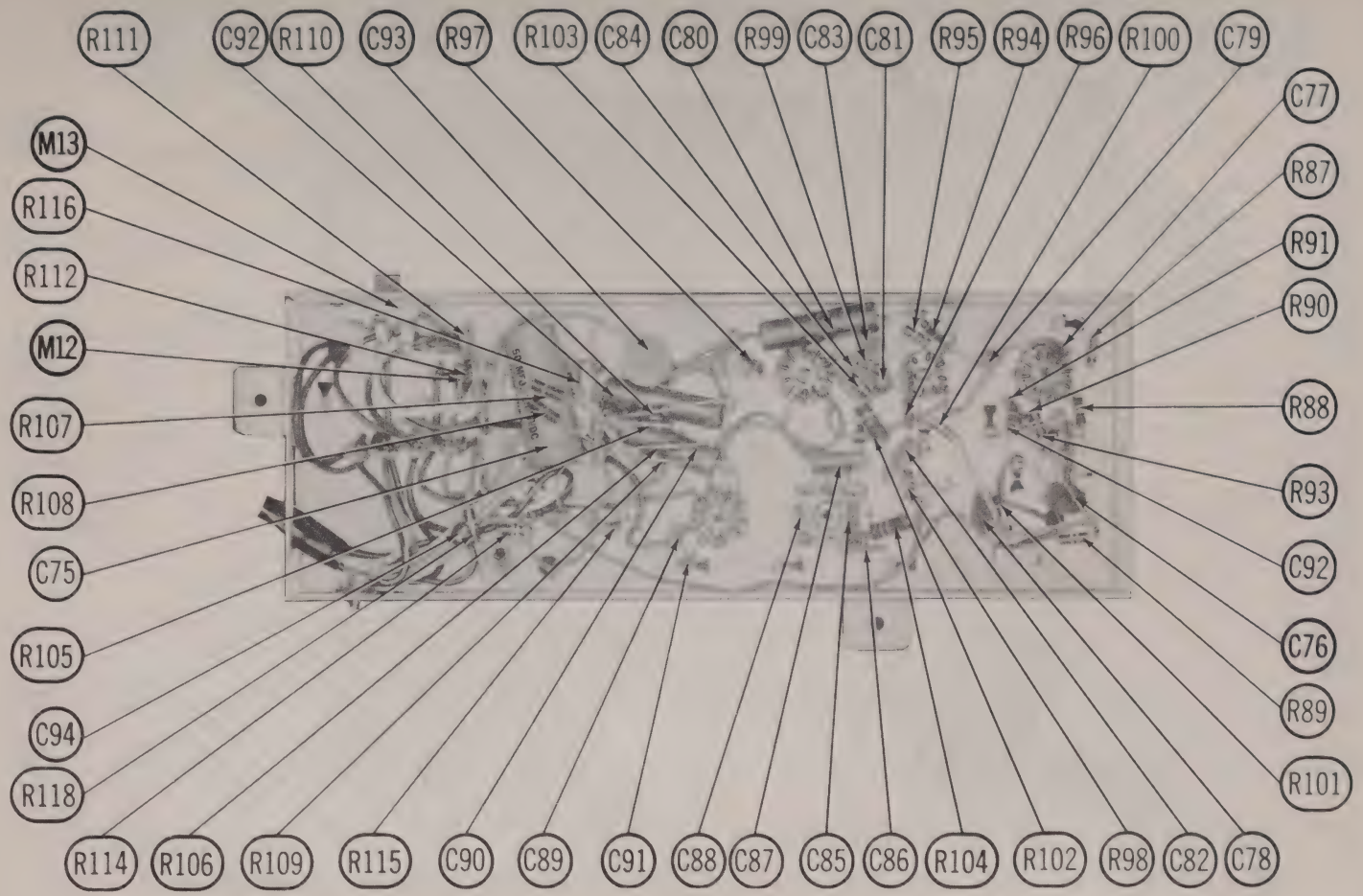


REMOTE CONTROL RECEIVER—TOP VIEW

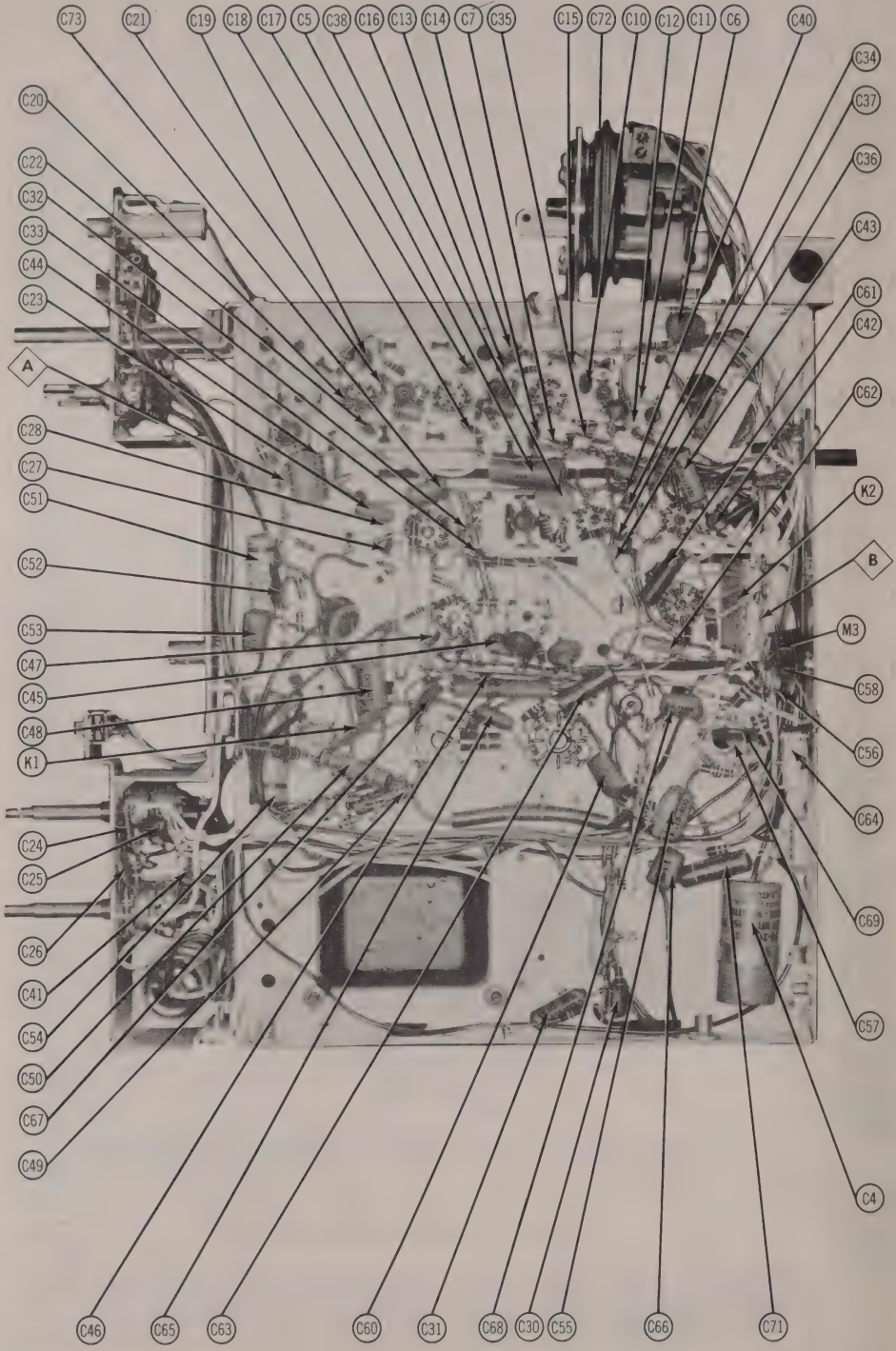
ALIGNMENT INSTRUCTIONS

ALIGNMENT OF REMOTE CONTROL

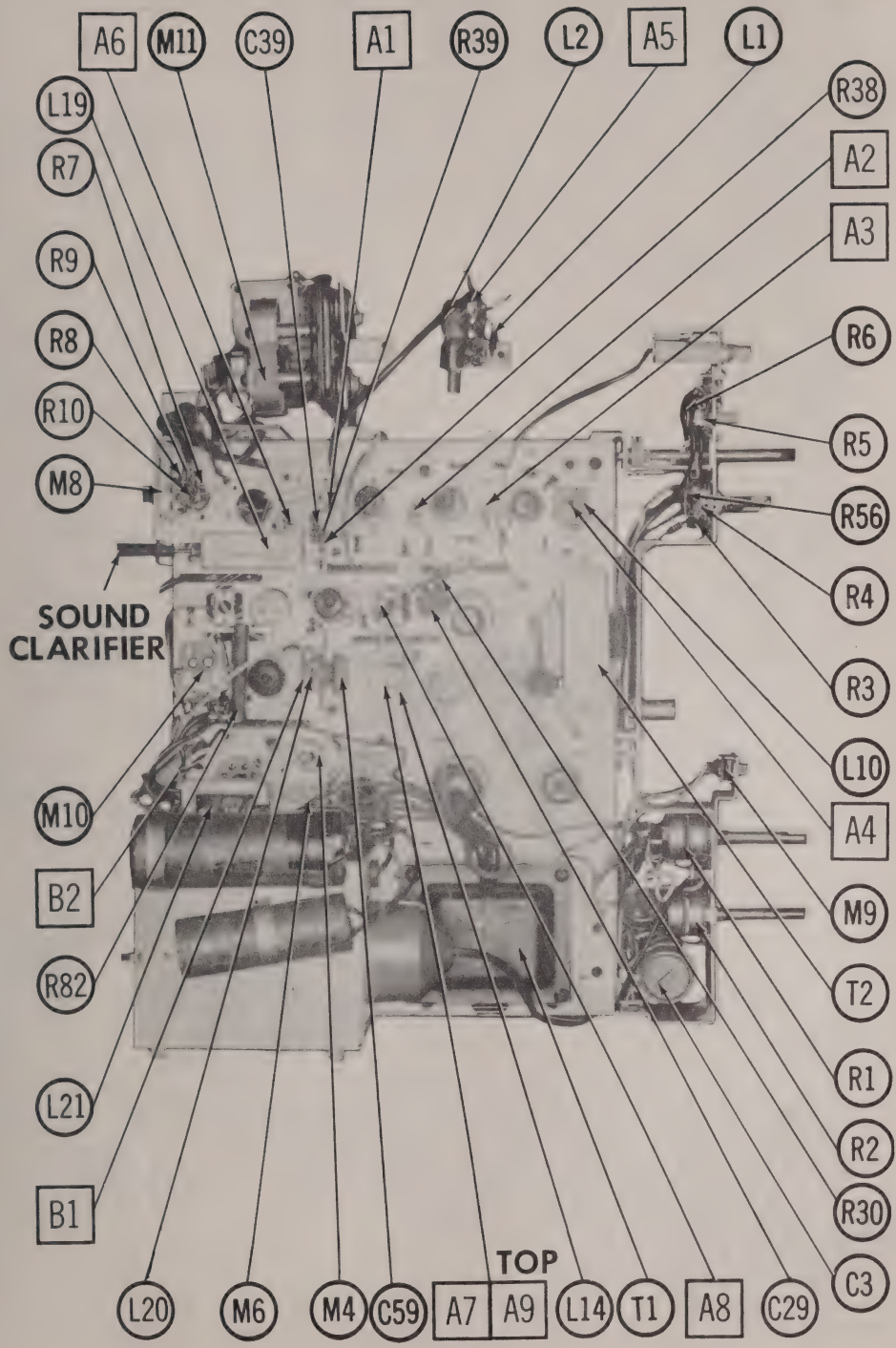
Circuits of the Remote Control Receiver and Transmitter have been carefully aligned at the factory and are generally not affected by tube or component replacement. Lead dress and location of components are important; they should not be disturbed when the unit is serviced.
If alignment is necessary, touch up the top slug of L23 (discriminator transformer) so that the robot transmitter functions properly.
If the microphone is changed, a slight adjustment of L22 (input coil) may be necessary.



REMOTE CONTROL RECEIVER - BOTTOM VIEW



TV CHASSIS BOTTOM VIEW - CAPACITOR, MISC., & ALIGN. IDENT.



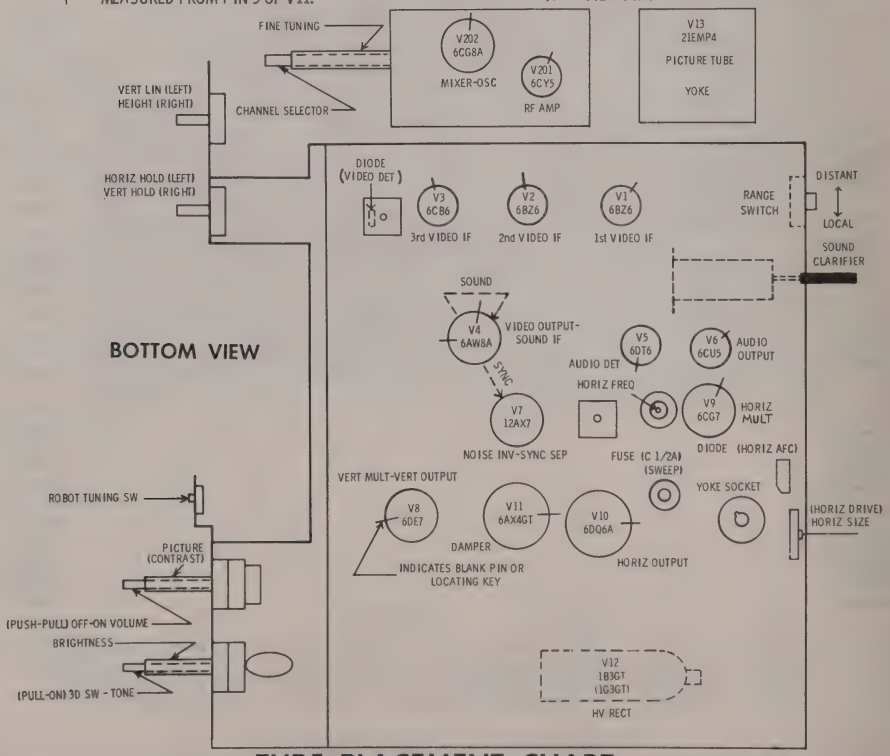
TV CHASSIS - TOP VIEW

RESISTANCE MEASUREMENTS

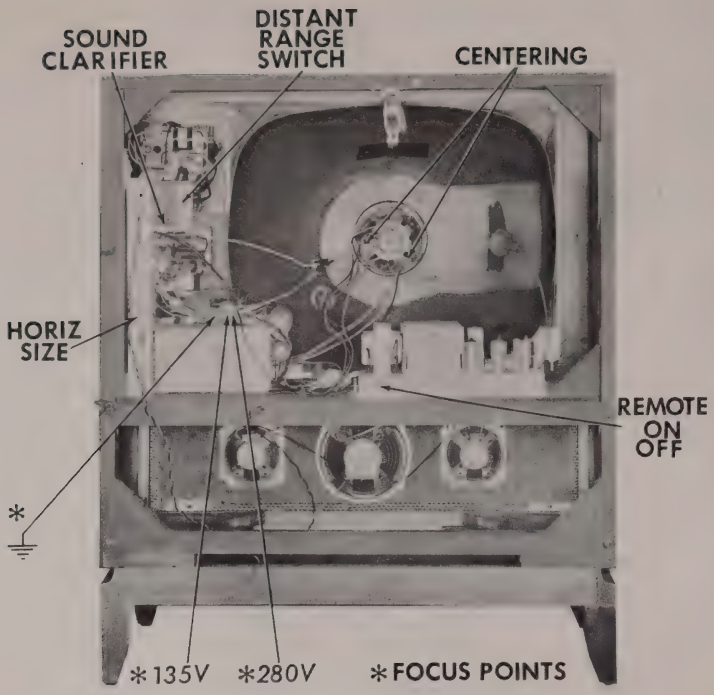
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	52K	47Ω	.2Ω	0Ω	▪330Ω	▪330Ω	0Ω		
V2	6BZ6	52K	56Ω	.2Ω	0Ω	▪330Ω	▪330Ω	0Ω		
V3	6CB6	.2Ω	180Ω	.2Ω	0Ω	▪330Ω	▪330Ω	0Ω		
V4	6AW8A	0Ω	100K	▪22K	.1Ω	0Ω	● 700Ω	900K	▪.7Ω	†6800Ω
V5	6DT6	4.7Ω	560Ω	.1Ω	0Ω	†270K	▪10K	560K		
V6	6CU5	¶	500K	0Ω	.1Ω	500K	†390Ω	†530Ω		
V7	12AX7	†330K	51K	35K	.1Ω	.1Ω	†100K	2.7meg	0Ω	0Ω
V8	6DE7	†425Ω	● 1.3meg	● 1.3meg	0Ω	.1Ω	●†1.7meg	● 900K	0Ω	470Ω
V9	6CG7	†10K	2.3meg	820Ω	0Ω	.1Ω	†82K	● 60K	820Ω	0Ω
V10	6DQ6A	TP	0Ω	NC	†12K	1meg	TP	.1Ω	0Ω	TOP CAP †45Ω
V11	6AX4GT	NC	NC	¶2.5meg	NC	†0Ω	NC	0Ω	.1Ω	
V12	1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP †420Ω
V13	21EMP4	0Ω	22K	†0Ω	†0Ω	NC	NC	● 200K	.1Ω	
V201	6CY5	530K	0Ω	0Ω	.1Ω	▪330Ω	▪10K	0Ω		
V202	6CG8A	15K	†10K	0Ω	.1Ω	0Ω	▪2500Ω	▪10K	0Ω	220K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM 280V SOURCE.
▪ MEASURED FROM 135V SOURCE.
‡ MEASURED FROM PIN 3 OF V11.

NC NO CONNECTION
TP TIE POINT



TUBE PLACEMENT CHART



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and allow it to warm up for 2 minutes. Tune in a TV station, preferably with a test pattern.

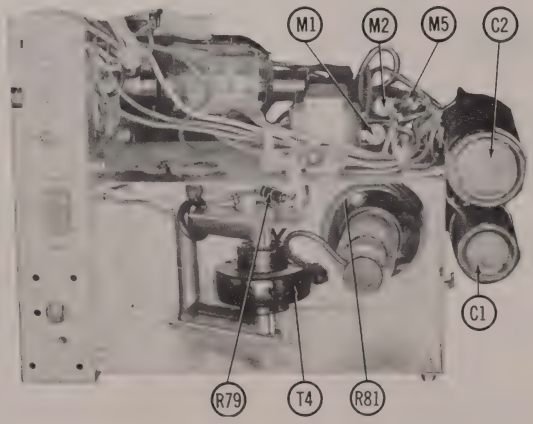
Connect a clip lead from point Ⓑ to chassis. Connect another clip lead across the Horizontal Frequency Coil (L20).

Adjust the Horizontal Hold until the picture synchronizes horizontally. (It may float back and forth.)

Remove the clip lead from L20. Adjust the Horizontal Frequency Slug (B1) until the picture is again in frequency. Remove clip lead from point Ⓑ and chassis.

Turn Horizontal Drive Trimmer (B2) counterclockwise until a vertical white line (drive line) appears near the center of the screen, then turn clockwise until line just disappears. If drive line cannot be obtained, adjust B2 for proper width.

If B2 is adjusted, recheck adjustment of B1 and Horizontal Hold.



HIGH VOLTAGE COMPARTMENT

PHOTOFACT® Folder

**PRODUCTION CHANGE
BULLETIN 248**

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 17 IN SET 490

WESTINGHOUSE MODELS H-57ACS1, H-57ACS2 (CH. V-2507-3)

Westinghouse Models H-57ACS1, H-57ACS2 (Ch. V-2507-3) were covered in PHOTOFACT Folder 17 - Set 490.

The following changes were made during late production.

TO FACILITATE PRODUCTION

C7, C8, C9, C10, R8, R9 were replaced with a res-cap couplate (Part #219V039H01).

C13, C14, C15, C16, R16, R17 were replaced with a res-cap couplate (Part #219V039H01).

TO PREVENT POWER TRANSFORMER DAMAGE DUE TO B+ SHORTS

A 47Ω 3 watt Fusible Resistor (Part #251V02H56) is added from the red-yellow center tap of T1 (Power Transformer) to ground. The following procedure may be used to insert this resistor.

1. Locate the terminal board that is diagonally located between the 6BQ5A sockets, There is an unused terminal on this board.
2. Remove the Power Transformer (T1) Ground Wire from the ground lug of the terminal board and solder it to the unused terminal.
3. Connect one end of the 47Ω Resistor to the center tap wire of T1 and connect the other end of this resistor to ground.
4. Disconnect the black/white wire from pin 2 of the Power Input Plug and reconnect it to pin 9.

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 11 IN SET 449

KNIGHT MODEL KN-141

Knight Model KN-140 was covered in PHOTOFACT Folder 11 - Set 449.

Model KN-141 which is electrically similar except for the following changes is added with the publication of this bulletin.

COMPONENTS CHANGED

C6 is omitted.

C9 is decreased from 10mmf to 6.8mmf.

R20 is increased from 560Ω 2W to 1000Ω 2W.

COMPONENTS ADDED

A Multiplex Input Socket is added to the junction of R8 and R19 through a 10000mmf capacitor.

A Tuning Eye (EM84) is added. A partial schematic diagram showing the new circuit is given in this bulletin on the reverse side.

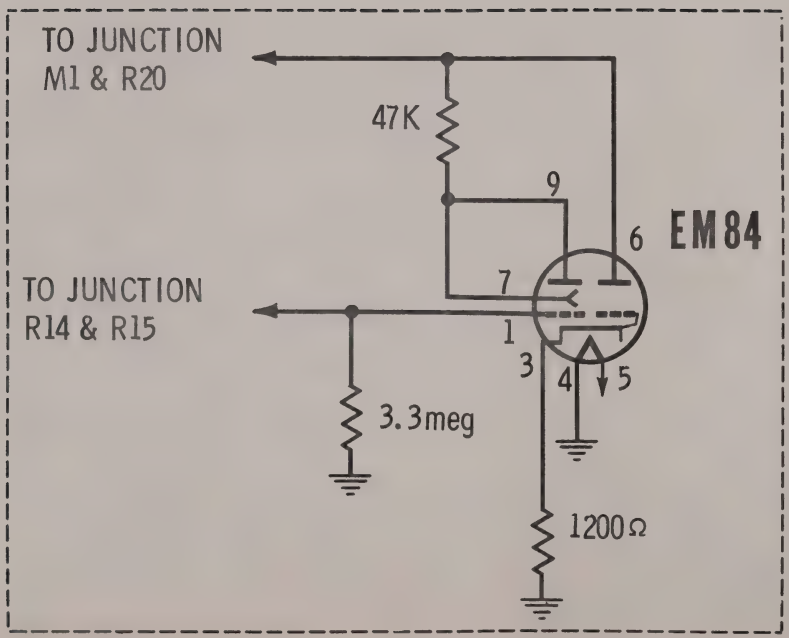
PRODUCTION CHANGE
BULLETIN 248

PRODUCTION CHANGE
BULLETIN 248

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

SET 508 FOLDER 3


TO JUNCTION
M1 & R20
47K
9
6
EM84
7
TO JUNCTION
R14 & R15
1
3
4
5
3.3meg
1200Ω

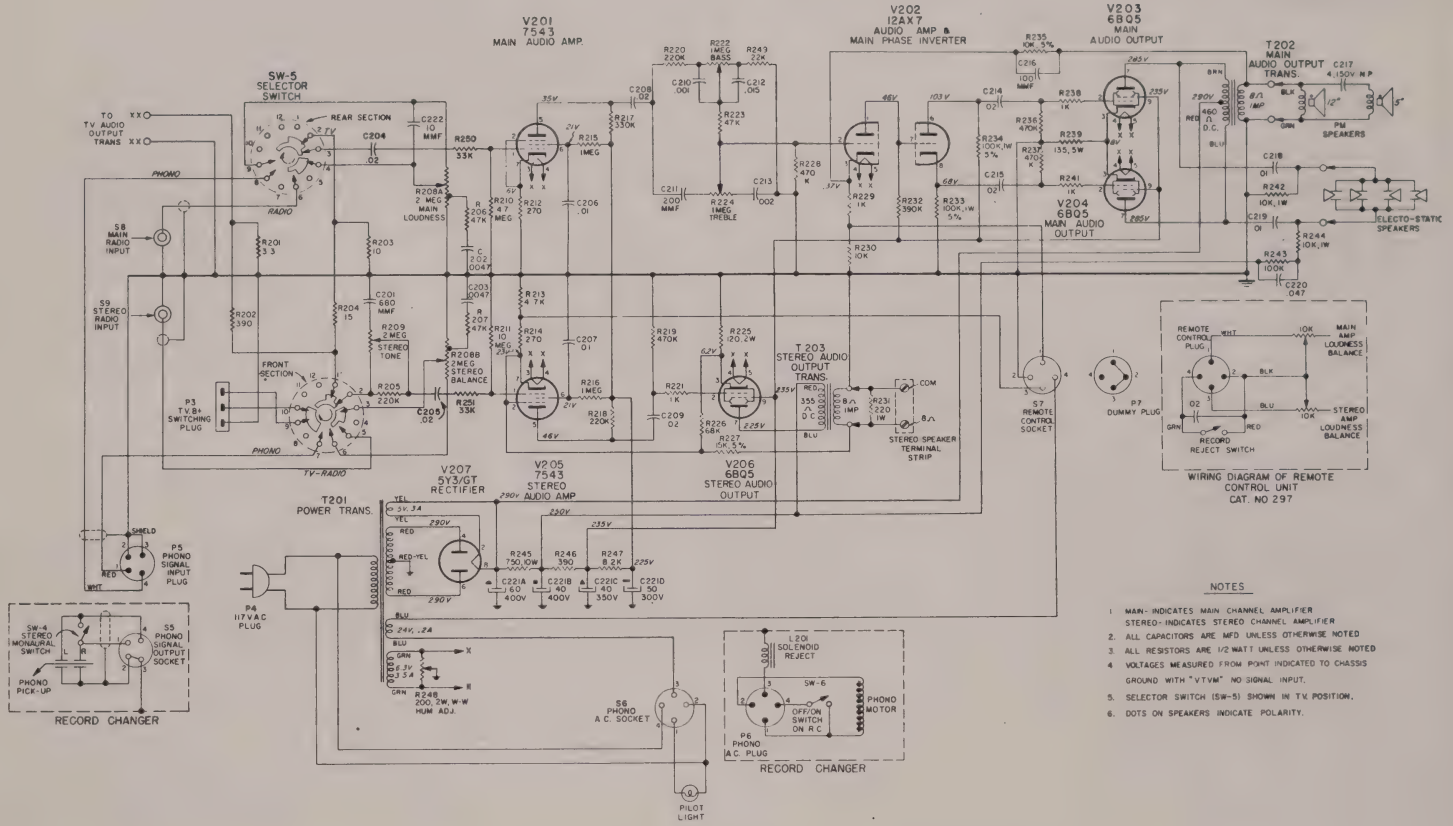
SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 2 IN SET 461

SILVERTONE CHASSIS
456.59592, 528.59592

Silvertone Models PC-194, PC-194-5, PC-196, PC-196-5, 194, 194-5, 196, 196-5 (Ch. 456.52220, 456.52221, 528.52220, 528.52221) were covered in PHOTOFACT Folder 2 - Set 461.

During late production some of the models listed above are equipped with a stereo phono and stereo amplifier. A schematic diagram showing the stereo amplifier (Ch. 456.59592, 528.59592) is given in this bulletin on the reverse side.

For information on the record changer see PHOTOFACT Folder 2 - Set 461.



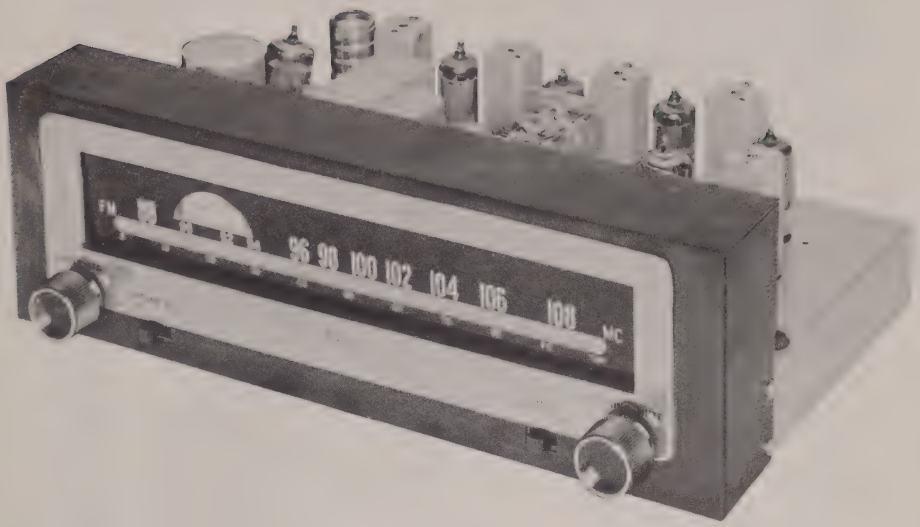
SILVERTONE CHASSIS 456.59592, 528.59592

Schematic Diagram Courtesy of Sears, Roebuck & Company

PHOTOFACT® Folder

ARKAY
MODEL FM-8

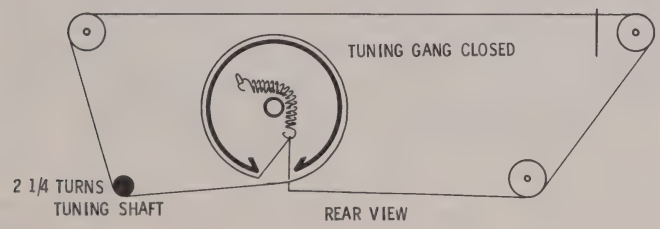
ARKAY
MODEL FM-8



ARKAY
MODEL FM-8

TRADE NAME	Arkay Model FM-8
MANUFACTURER	Arkay International, Inc., 88-06 Van Wyck Expressway, Jamaica 18, N. Y.
TYPE SET	AC Operated 8 Tube FM Tuner
POWER SUPPLY	105 - 120 Volts AC, 60 Cycles
TUNING RANGE	FREQ. MOD. 88 - 108MC RATING 32 Watts, .36 Amp. @ 117 Volts AC

DIAL CORD STRINGING



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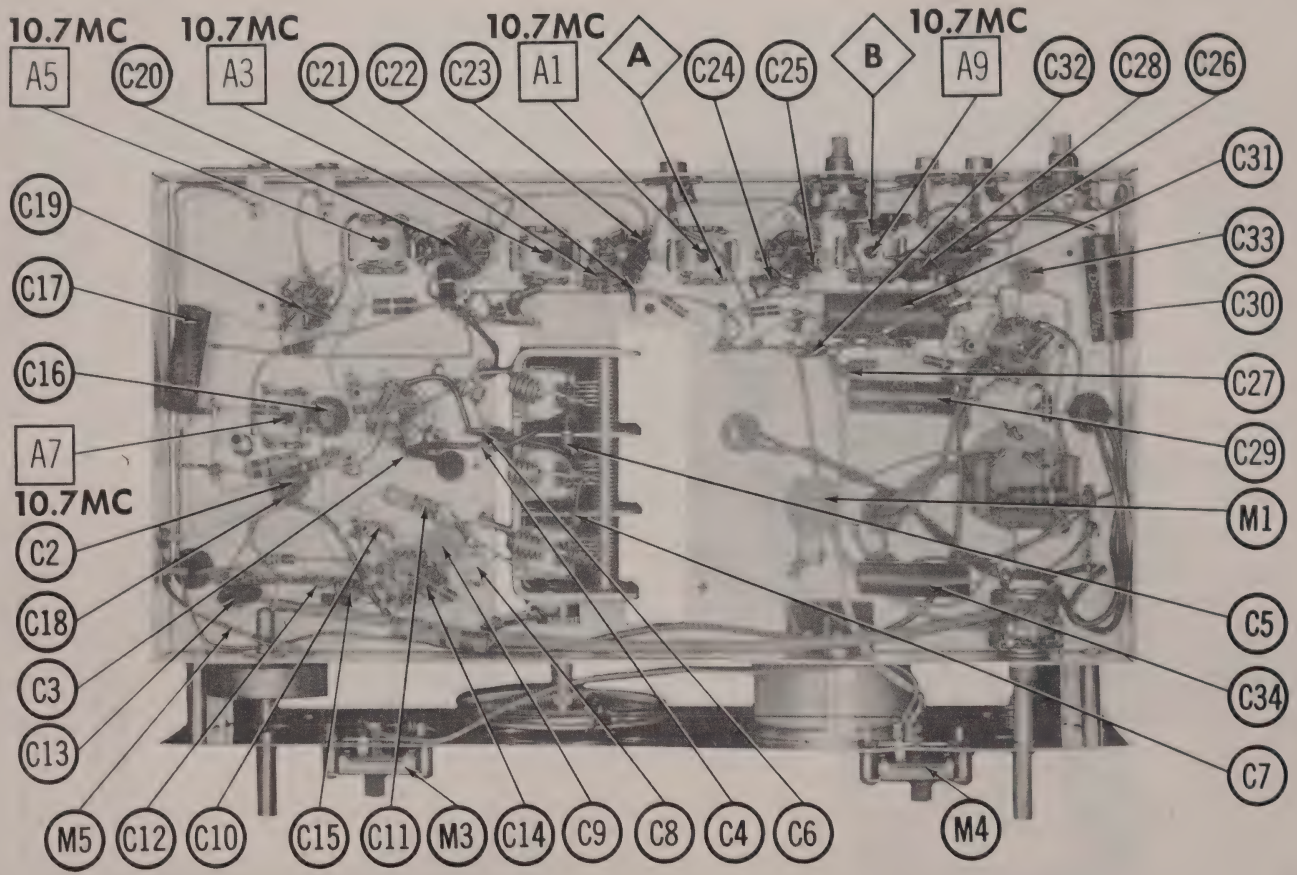
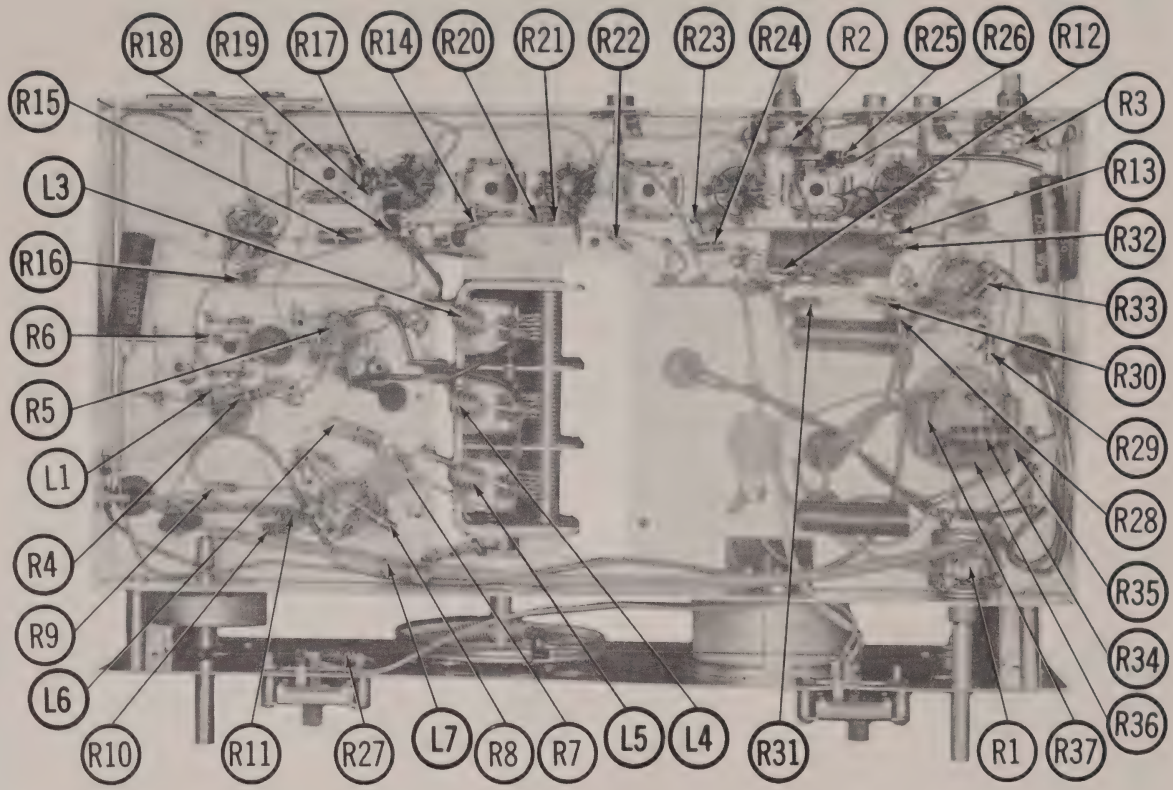
KJ183

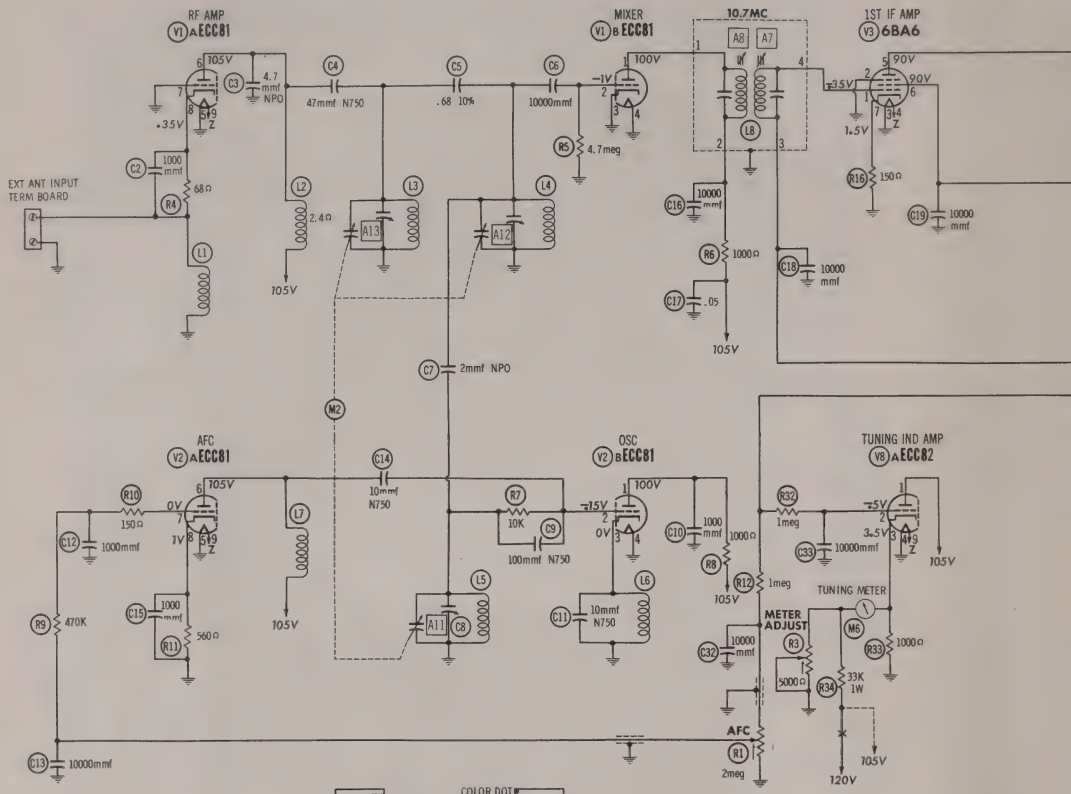
SET 508 FOLDER 4

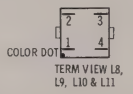


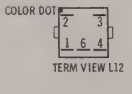
CHASSIS BOTTOM VIEW - ALIGNMENT, CAPACITOR & MISC. IDENT.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION







RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC81 12AT7	†1600Ω	4.7meg	0Ω	0Ω	0Ω	†650Ω	0Ω	68Ω	.1Ω
V2	ECC81 12AT7	†1600Ω	10K	0Ω	0Ω	0Ω	†650Ω	470K	560Ω	.1Ω
V3	6BA6	1meg	0Ω	0Ω	.1Ω	†1600Ω	†1600Ω	150Ω		
V4	6BA6	.1Ω	0Ω	0Ω	.1Ω	†1600Ω	†1600Ω	150Ω		
V5	EF94 6AU6	47K	0Ω	0Ω	.1Ω	†9000Ω	†9000Ω	0Ω		
V6	EF94 6AU6	100K	0Ω	0Ω	.1Ω	†22K	†22K	0Ω		
V7	6AL5	0Ω	100K	0Ω	.1Ω	200K	0Ω	100K		
V8	ECC82 12AU7	†650Ω	1.2meg	1000Ω	0Ω	0Ω	†100K	1meg	23K	.1Ω

† MEASURED FROM OUTPUT OF M1.
ALL MEASUREMENTS MADE WITH AFC CONTROL TO MINIMUM.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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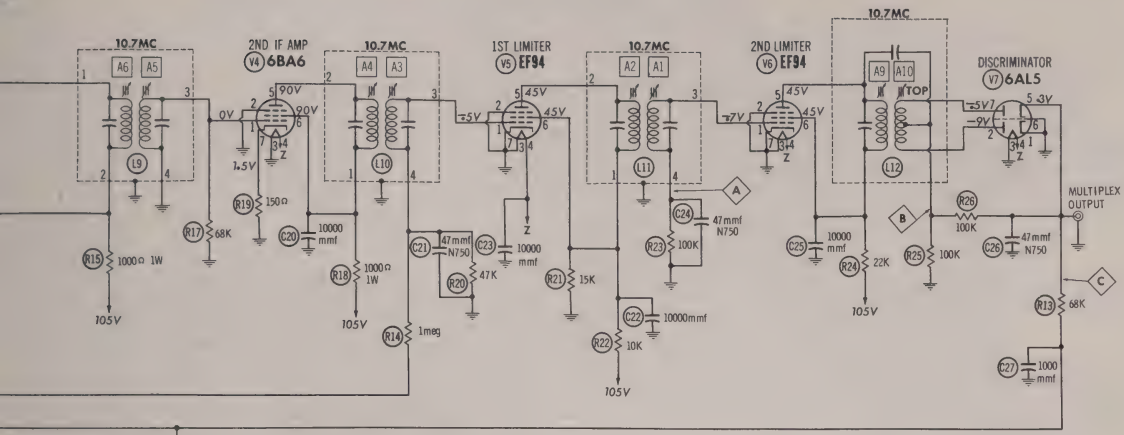
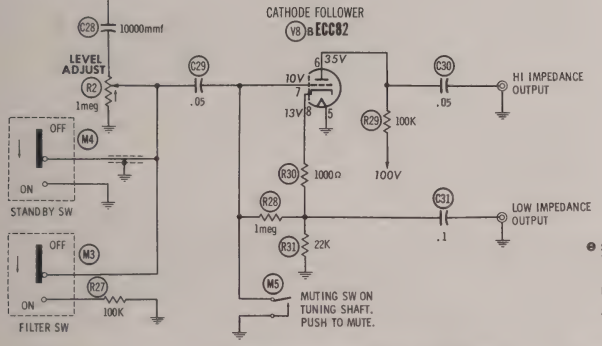
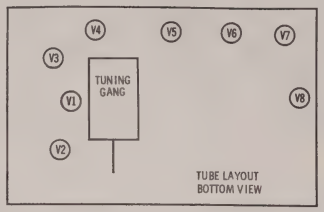






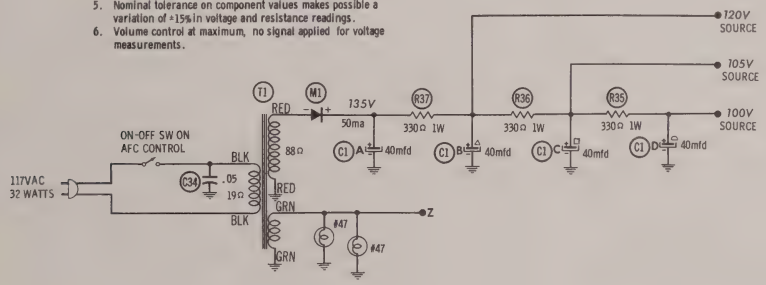
Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.



**ARKAY
MODEL FM-8**

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.
Suggested Alignment Tools: A1 thru A10 ..... GENERAL CEMENT #5097, 8727
WALSCO #2515
A11, A12, A13 ... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	High side thru .01mfd to pin 2 (grid) of Mixer. Low side to chassis.	10.7MC (Unmod.)	Point of non-interference	DC probe to point Ⓐ. Common to chassis.	A1, A2, A3, A4, A5, A6, A7, A8	Adjust for maximum deflection.
2.	"	"	"	DC probe thru 1meg to point Ⓑ. Common to chassis.	A9	"
3.	"	"	"	DC probe to point Ⓒ. Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.	High side thru .01mfd to pin 2 (grid) of Mixer. Low side to chassis.	10.7MC (450KC Swp.)	Point of non-interference	Vert. Amp. to point Ⓐ. Low side to chassis.	A1, A2, A3, A4, A5, A6, A7, A8	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
2.	"	"	"	Vert. Amp. thru 47K to point Ⓑ. Low side to chassis.	A9	"
3.	"	"	"	Vert. Amp. to point Ⓒ. Low side to chassis.	A10	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.

RF ALIGNMENT

AFC fully counterclockwise.
Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	Across antenna terminals with 120Ω in each lead.	108MC (Unmod.)	108MC	DC probe to point Ⓐ. Common to chassis.	A11, L5	Adjust for maximum deflection.
5.	"	88MC	88MC	"		Readjust L5 for maximum deflection. Repeat steps 4 and 5.
6.	"	106MC	106MC	"	A12, L4, A13, L3	Adjust for maximum deflection. Repeat steps 4 thru 6.

FIG. 1

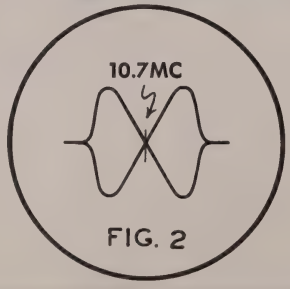


FIG. 2

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (GENERAL ELECTRIC • RAYTHEON • SYLVANIA)
V1	RF Amp.-Mixer	ECC81/12AT7
V2	Osc.-AFC	ECC81/12AT7
V3	1st IF Amplifier	6BA6
V4	2nd IF Amplifier	6BA6
V5	1st Limiter	EF94/6AU6
V6	2nd Limiter	EF94/6AU6
V7	Discriminator	6AL5
V8	Cathode Follower - Tuning Ind. Amp.	ECC82/12AU7

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA ARKAY PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	40	150		AFH4-01-60	D0010		TMQ-4089	TVL-4441	
B	▲40	150							
C	■40	150							
D	▲40	150							

FIXED CAPACITORS

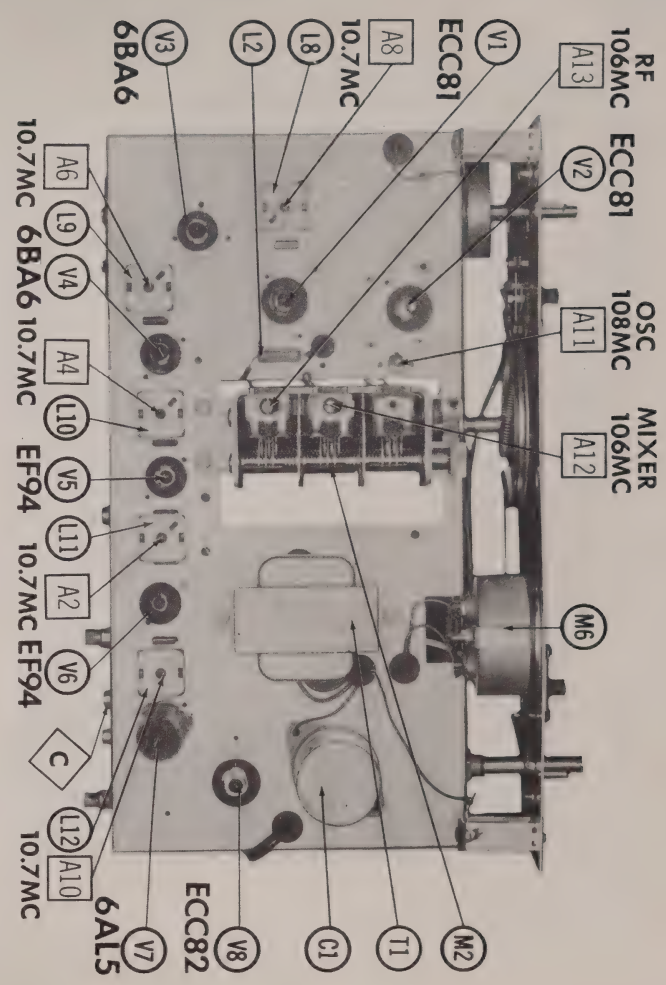
Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C3	4.7 NPO		NPO-DI 4.7	DTZ-4R7	C10V47C	CCTO-4R7	CNO-547	10TCC-V47
C4	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C5	.68 10%		NPO-SI .68	TCZ-R68				
C6	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C7	2 NPO		NPO-DI 2.2	DTZ-2R2	C10V22C	CCTO-2R2	CNO-522	10TCC-V22
C8								
C9	100 N750		N750-DI 100	DTN-100	C10T1C	CCTO-101	CNO-310	10TCC-T10
C10	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C11	10 N750		N750-DI 10	DTN-10	C10Q1U	CCTN-100	CN7-410	10TCU-Q10
C12	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C13	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C14	10 N750		N750-DI 10	DTN-10	C10Q1U	CCTN-100	CN7-410	10TCU-Q10
C15	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C16	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C17	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C18	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C19	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C20	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C21	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C22	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C23	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C24	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C25	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C26	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C27	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C28	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C29	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C30	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C31	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C32	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C33	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C34	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ARKAY PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2meg	½		B-75	A47-2meg-S	Q11-139	U56	AFC
B	Shaft			Not Req.	RS-3	Not Req.	Not Req.	
C	Switch			KR-1	SWE-12	76-1	US-26	Power Off-On
R2A	1meg	½		BX-69	B47-1meg-S	B11-137	SU-54	Level Adjust
B	Shaft			Not Req.	Not Req.	SK6	Not Req.	
R3A	5000Ω	½		BX-10	B47-5000-S	B11-114	SU-14	Meter Adjust
B	Shaft			Not Req.		SK6	Not Req.	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R4	68Ω	
R5	4.7meg	
R6	1000Ω	
R7	10K	
R8	1000Ω	
R9	470K	
R10	150Ω	
R11	560Ω	
R12	1meg	
R13	68K	
R14	1meg	
R15	1000Ω 1W	

ITEM No.	RATING	REMARKS
R16	150Ω	
R17	68K	
R18	1000Ω 1W	
R19	150Ω	
R20	47K	
R21	15K	
R22	10K	
R23	100K	
R24	22K	
R25	100K	
R26	100K	
R27	100K	

ITEM No.	RATING	REMARKS
R28	1meg	
R29	100K	
R30	1000Ω	
R31	22K	
R32	1meg	
R33	1000Ω	
R34	33K 1W	
R35	330Ω 1W	
R36	330Ω 1W	
R37	330Ω 1W	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		ARKAY PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Ant. Choke	①	BC-561	4602	RTC-8515	1uh
L2	RF Choke	①	BC-564	4608	RTC-8518	3.3uh
L3	RF Coil					
L4	Mixer Coil					
L5	Osc. Coil					
L6	Cathode Choke	①	BC-561	4602	RTC-8515	1uh
L7	RF Choke	②	BC-563	4606	RTC-8517	2.2uh
L8	1st IF Trans.	1607-6	FM-254	1463	RTC-8599	
L9	2nd IF Trans.	1607-6	FM-254	1463	RTC-8599	
L10	3rd IF Trans.	1607-6	FM-254	1463	RTC-8599	
L11	4th IF Trans.	1607-6	FM-254	1463	RTC-8599	
L12	Discriminator	ED-531K	FM-253	1464	RTC-8665	

① IRC Part #CLA.
② IRC Part #CL-1.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	ARKAY PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V ⓐ .36A	120V ⓐ .050A	6.3V ⓐ 2.7A						

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	ARKAY PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.050A			1N1764 ♦	75A *	SR200 ♦	* Selenium Type ♦ Silicon Type

MISCELLANEOUS

ITEM No.	PART NAME	ARKAY PART No.	NOTES
M2	Tuning Cap.		3 Gang
M3	Switch		Filter Off-On (SPDT Slide Type)
M4	Switch		Stand By (SPDT Slide Type)
M5	Switch		Muting (Shorting Type, Actuated by Pushing Tuning Shaft)
M6	Meter		Tuning

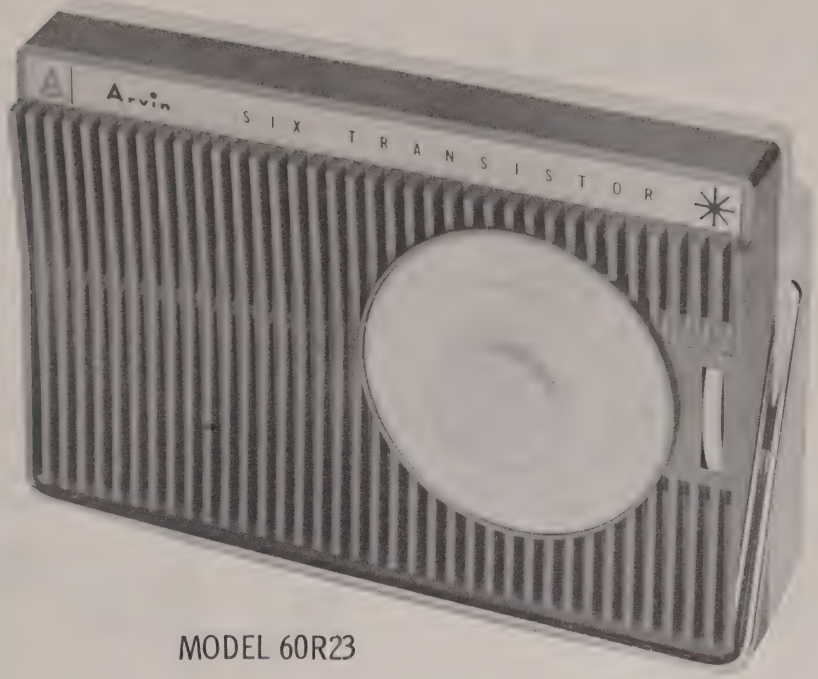
WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT® Folder with CIRCUITRACE®

ARVIN MODELS 60R23, 60R28, 60R29 (Ch. 1.49201)

ARVIN MODELS 60R23, 60R28, 60R29 (Ch. 1.49201)



MODEL 60R23

ARVIN MODELS 60R23, 60R28, 60R29 (Ch. 1.49201)

TRADE NAME	Arvin Models 60R23, 60R28, 60R29 (Ch. 1.49201)
MANUFACTURER	Arvin Industries, Inc., Columbus, Indiana
TYPE SET	Battery Operated Transistorized Portable AM Receiver
POWER SUPPLY	6 Volts DC
RATING	6MA@6 Volts DC (No Signal, Min. Volume) 12MA@6 Volts DC (Signal, Normal Volume)
TUNING RANGE—BROADCAST	540 — 1670KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:
A1, A2, A3.....GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO # 2515, 2531, 2532
A4, A5.....GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291
WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538
A6.....GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .05mfd to Antenna stator lug of tuning gang. Low side to chassis.	455KC (400∿ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3	Adjust for maximum output.
2.	Loop	1670KC	"	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	1400KC	1400KC Signal	"	A5	"
4.	"	600KC	600KC	"	A6	Adjust for maximum output while rocking tuning gang.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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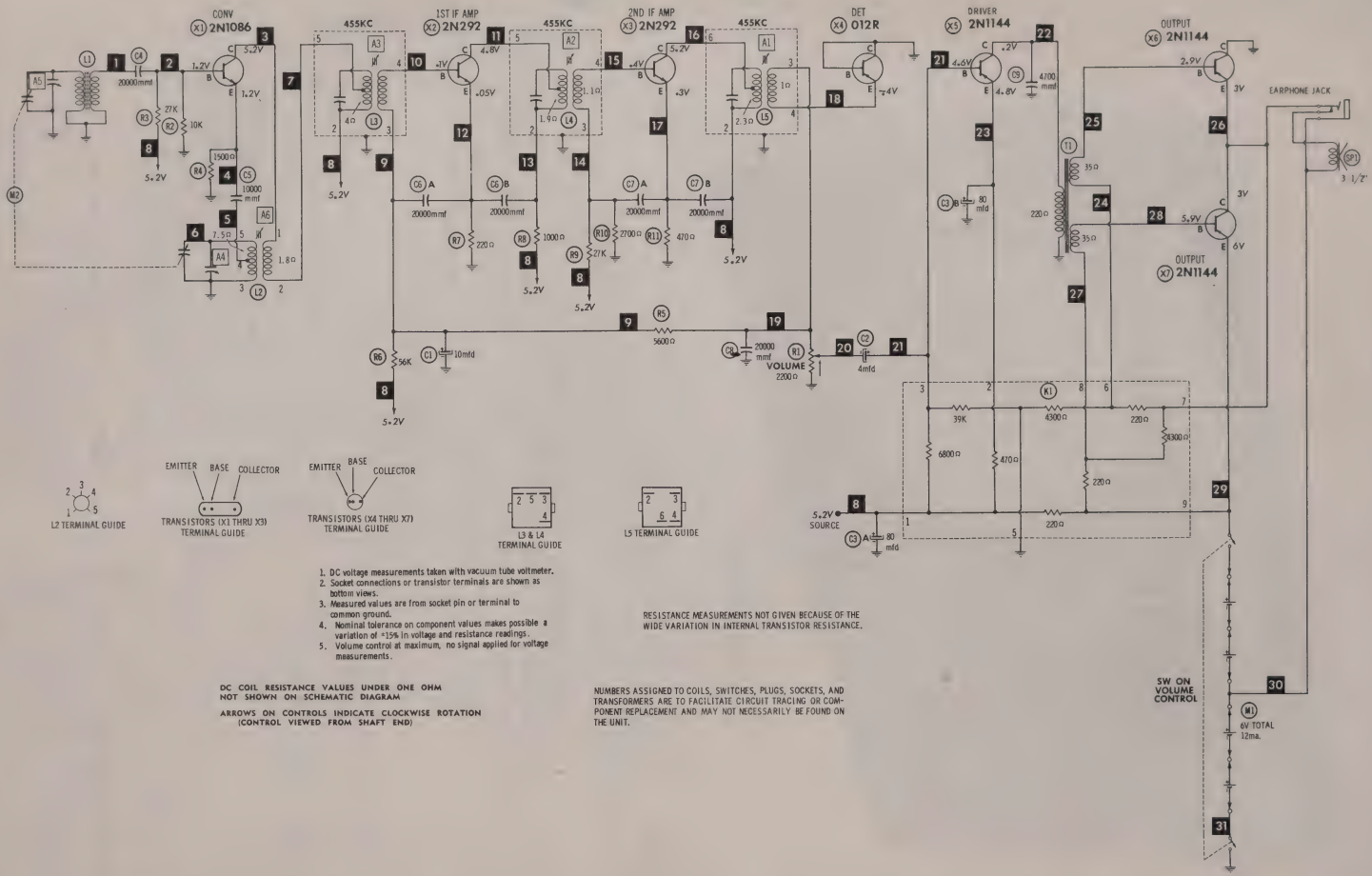
KF169

SET 508 FOLDER 5



1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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ARVIN MODELS 60R23, 60R28, 60R29 (Ch. 1.49201)

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N1086	Converter		2N1366		NPN
X2	2N292	1st IF Amplifier		2N1367	2N169	NPN
X3	2N292	2nd IF Amplifier		2N1367	2N169	NPN
X4	012R	Detector				PNP
X5	2N1144	Driver	2N408			PNP
X6	2N1144	Output	2N408			PNP
X7	2N1144	Output	2N408			PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	ARVIN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	10	10	44396-4	PTT10010	NLW10-15	TT12X10	ML10-15	TE-1114	
C2	4	10	44396-1	PTT10005	NLW4-15	TT50X4	ML4-15	TE-1123	
C3A	80	12	44397-3	BCD10X8080	ECPAN14	TT15X100		VL-2350	
B	80	12				TT15X100			

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C5	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C6A	20000		BPD-2X02	DD-203	BYB6S2	CCD-203	B-120	5HK-2XS20
B	20000			DD-203	BYB6S2	CCD-203	B-120	
C7A	20000		BPD-2X02	DD-203	BYB6S2	CCD-203	B-120	5HK-2XS20
B	20000			DD-203	BYB6S2	CCD-203	B-120	
C8	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C9	4700		BPD-0047	DD-247	BYA10D47M	CCD-247	B-247	5HK-D47

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	ARVIN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	2200Ω	1/4	46800-5					Volume & Switch

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	10K	
R3	27K	
R4	1500Ω	
R5	5600Ω	

ITEM No.	RATING	REMARKS
R6	56K	
R7	220Ω	
R8	1000Ω	
R9	27K	

ITEM No.	RATING	REMARKS
R10	2700Ω	
R11	470Ω	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ARVIN PART No.	REPLACEMENT DATA
K1	Driver - Output Net.	(3) 220Ω, 470Ω, (2) 4300Ω, 6800Ω, 39K	46000-6	

PRINTED BOARD

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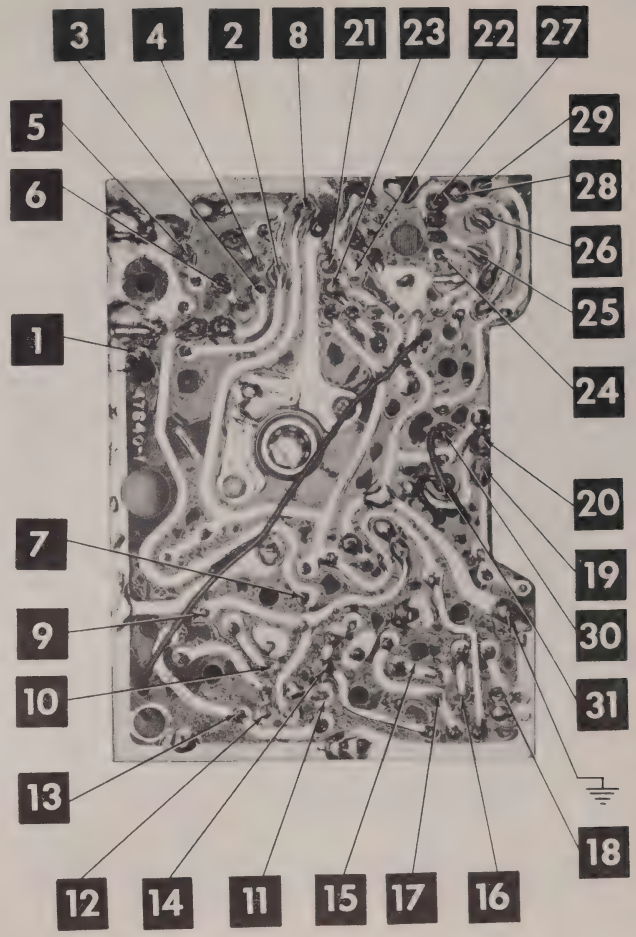


ARVIN MODELS 60R23, 60R28, 60R29 (Ch. 1.49201)

FOLDER 5

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		ARVIN PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Loopstick	46861-5				
L2	Osc. Coil	45783-16				
L3	1st IF Trans.	45900-17				
L4	2nd IF Trans.	45900-9				
L5	3rd IF Trans.	45900-16				

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	ARVIN PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	3.8	1 SEC. 2 1	45604-6					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ARVIN PART No.	QUAM PART No.	
SP1	3½"	PM	46.3Ω	46523-2		

BATTERIES

ITEM No.	VOLTAGE	ARVIN PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	1.5V			130 *		635 *		M-14R *	* 4 Required

MISCELLANEOUS

ITEM No.	PART NAME	ARVIN PART No.	NOTES
M2	Tuning Cap. Printed Board	48144 47840-1	2 Gang

CABINETS & CABINET PARTS

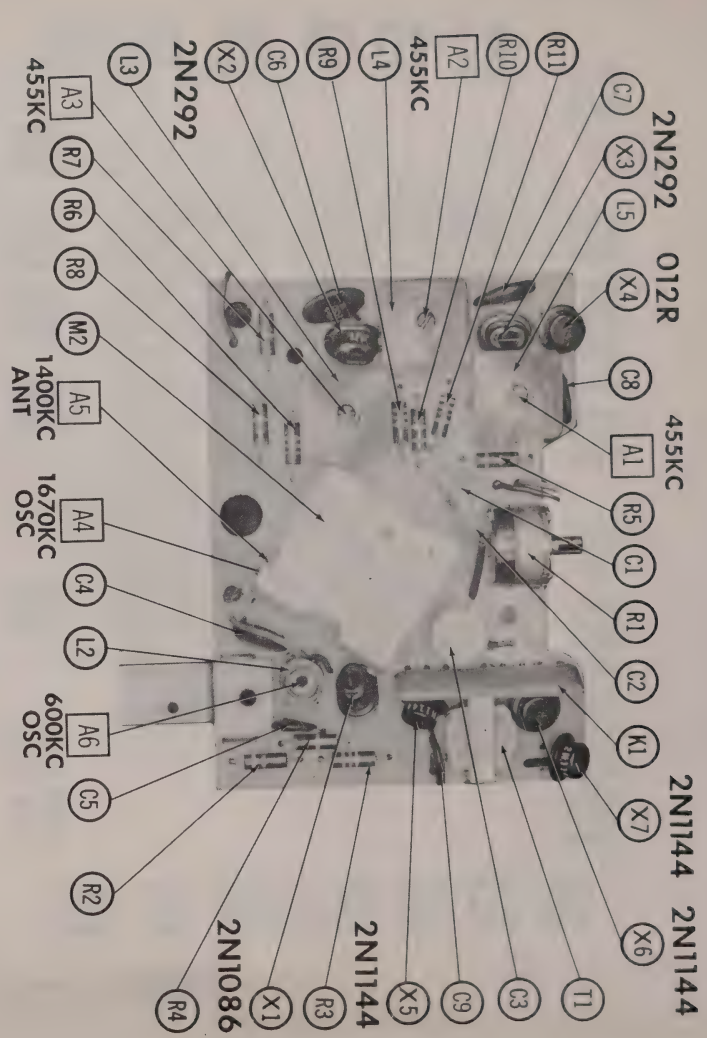
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	47818	Tuning
Knob	17819-67	Volume, White
Cabinet	49048-33	Front Assembly, Flame
Cabinet	49048-149	Front Assembly, Gray
Cabinet	49048-208	Front Assembly, Sandstone
Cabinet	46611-67	Back Assembly, White
Cabinet	46611-188	Back Assembly, Taupe
Handle	47891-2	Cabinet

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

CHASSIS—TOP VIEW

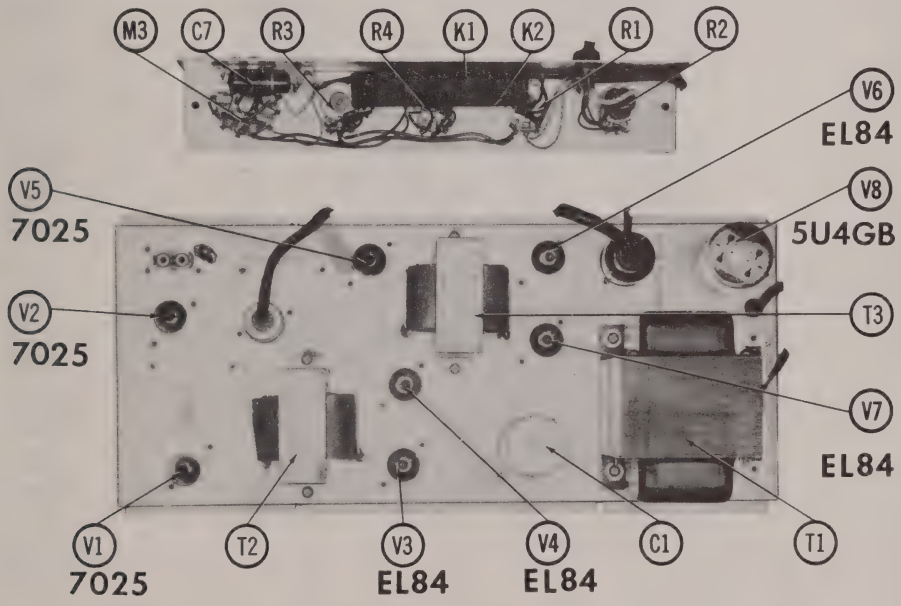


PHOTOFACT® Folder

CAPITOL MODEL 936

TRADE NAME	Capitol Model 936
MANUFACTURER	Capitol Records, Inc., 1 S. Webster Ave., Scranton 5, Pa.
TYPE SET	AC Operated 8 Tube Stereo Phono Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 130 Watts, 1.2 Amp. @ 117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER — SEE GARRARD RC-88 — PHOTOFACT SET 338
FOLDER 5 OR RECORD CHANGER MANUAL CM-9



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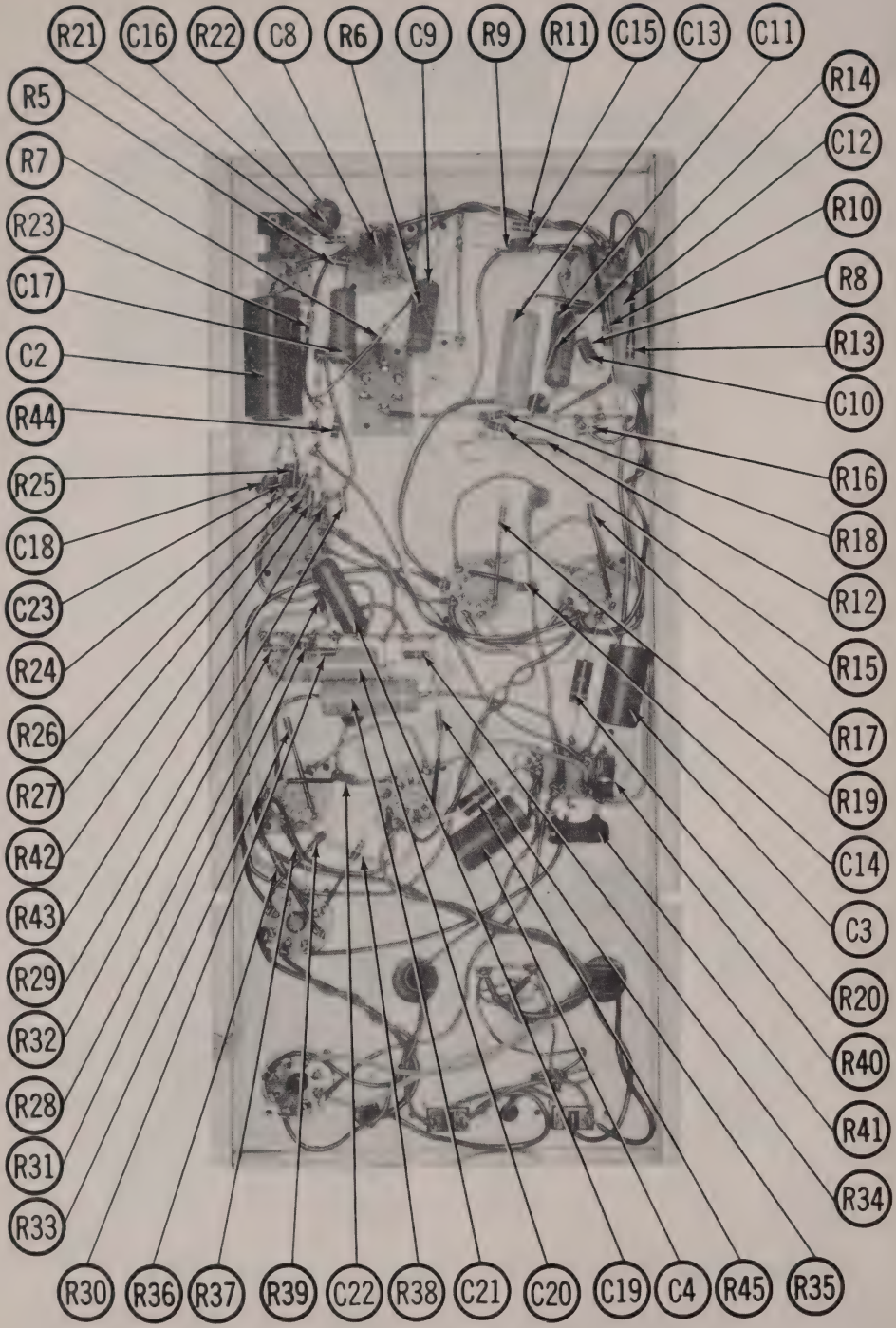
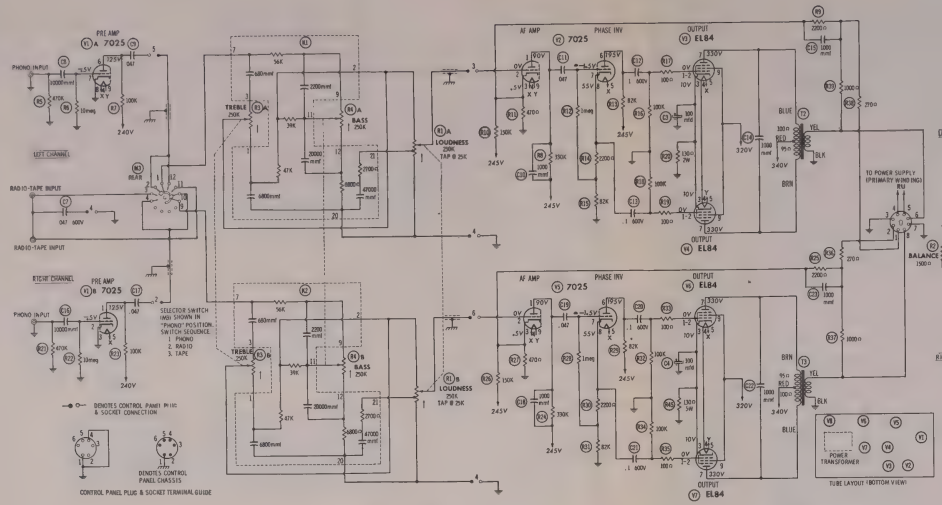
KT181

CAPITOL MODEL 936
CAPITOL MODEL 936
SET 508 FOLDER 6



CHASSIS BOTTOM VIEW

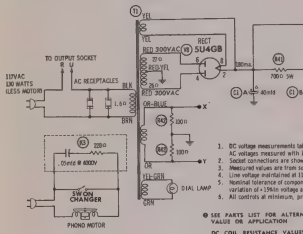


RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	7025	¶ 130K	10meg	0 Ω	50 Ω	50 Ω	¶ 130K	10meg	0 Ω	NC
V2	7025	¶ 340K	1000 Ω	450 Ω	50 Ω	50 Ω	¶ 90K	1.1meg	85K	NC
V3	EL84 6BQ5	NC	100K	230 Ω	50 Ω	50 Ω	NC	¶ 100 Ω	NC	¶ 700 Ω
V4	EL84 6BQ5	NC	100K	230 Ω	50 Ω	50 Ω	TP	¶ 95 Ω	NC	¶ 700 Ω
V5	7025	¶ 340K	1000 Ω	450 Ω	50 Ω	50 Ω	¶ 90K	1.1meg	85K	NC
V6	EL84 6BQ5	NC	100K	130 Ω	50 Ω	50 Ω	TP	¶ 95 Ω	NC	¶ 700 Ω
V7	EL84 6BQ5	NC	100K	130 Ω	50 Ω	50 Ω	TP	¶ 100 Ω	NC	¶ 700 Ω
V8	5U4GB	NC	¶	NC	26 Ω	NC	27 Ω	NC	¶	

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 2 OF V8.
▬ MEASURED FROM PIN 8 OF V2.
■ MEASURED FROM PIN 8 OF V5.

NC NO CONNECTION
TP TIE POINT



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±10% in voltage and resistance readings.
6. All controls at minimum, proper output load connected

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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CAPITOL
MODEL 936

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆)
V1	Left Channel Preamp. - Right Channel Preamp.	7025
V2	Left Channel AF Amp. - Phase Inv.	7025
V3	Left Channel Output	EL84/6BQ5
V4	Left Channel Output	EL84/6BQ5
V5	Right Channel AF Amp. - Phase Inv.	7025
V6	Right Channel Output	EL84/6BQ5
V7	Right Channel Output	EL84/6BQ5
V8	Rectifier	5U4GB

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA CAPITOL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	450	160-010	AFH3-44	C0350	FP377	TMT-3748	TVL-3787	
B	■40	450							
C	▲40	450							
C2	16	350	170-461	PRS1640	BR1635	TC64	TD-16-350	TVA-1607	
C3	100	25	105-004	PRS1270	BBRI00-25	TC2501	TD-100-25	TVA-1207	
C4	100	25	105-004	PRS1270	BBRI00-25	TC2501	TD-100-25	TVA-1207	
C5	2	200NP	170-002	PRS7500	BR4-150	TC50X †		TVANS-1435.1*	
C6	2	200NP	170-002	PRS7500	BR4-150	TC50X †		TVANS-1435.1*	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
† Use 2 units. Connect negative terminals together. Connect positive terminals into circuit the same as the original non-polarized unit.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C7	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C8	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C9	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C10	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C11	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C12	.1 600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C13	.1 600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C14	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C15	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C16	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C17	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C18	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C19	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C20	.1 600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C21	.1 600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C22	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C23	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CAPITOL PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	250K	log	130-061					Loudness, Right Channel
	25K Tap	log						
B	250K	log						Loudness, Left Channel
	25K Tap	log						
R2A	1500Ω	log	130-060					Balance
B	Switch					B11-109 SK7		Push-Pull Off-On
R3A	250K	antilog	130-059	B-51	AD47-250K-Z		FA254A	Treble, Right Channel
B	250K	antilog		SR-51	Not Req.		RU254A	Treble, Left Channel
C	Shaft			Not Req.	KSS-3		CS3500	
R4A	250K	antilog	130-059	B-51	AD47-250K-Z		FA254A	Bass, Right Channel
B	250K	antilog		SR-51	Not Req.		RU254A	Bass, Left Channel
C	Shaft			Not Req.	KSS-3		CS3500	

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R5	470K	
R6	10meg	
R7	100K	
R8	330K	
R9	2200Ω	
R10	150K	
R11	470Ω	
R12	1meg	
R13	82K	
R14	2200Ω	
R15	82K	
R16	100K	
R17	100Ω	
R18	100K	

ITEM No.	RATING	REMARKS
R19	100Ω	
R20	130Ω 2W	
R21	470K	
R22	10meg	
R23	100K	
R24	330K	
R25	2200Ω	
R26	150K	
R27	470Ω	
R28	1meg	
R29	82K	
R30	2200Ω	
R31	82K	
R32	100K	

ITEM No.	RATING	REMARKS
R33	100Ω	
R34	100K	
R35	100Ω	
R36	270Ω	
R37	1000Ω	
R38	270Ω	
R39	1000Ω	
R40	8200Ω 2W	
R41	700Ω 5W	IRC#PW5-700Ω
R42	100Ω	
R43	100Ω	
R44	2700Ω	
R45	130Ω 5W	IRC#PW5-130Ω

PARTS LIST AND DESCRIPTIONS (Continued)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	CAPITOL PART No.	REPLACEMENT DATA
K1	Tone Comp.	680mmf, 2200mmf, 6800mmf, 20000mmf, 47000mmf, 27000, 68000, 39K, 47K, 56K	3985-209	
K2	Tone Comp.	680mmf, 2200mmf, 6800mmf, 20000mmf, 47000mmf, 27000, 68000, 39K, 47K, 56K	3985-209	
K3	Phono Motor Shunt	.05mfd - 4000V, 220Ω		

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA: CAPITOL PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
	PRI.	SEC. 1	SEC. 2						
T1	117V@ 1.2A	610 VCT @ .180A	5V@ 3A	200-003					
	SEC. 3	SEC. 4	SEC. 5						
	6.3V@ .150A	12.6V@ 2A							

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA: CAPITOL PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
	PRI.	SEC.						
T2	7200Ω CT	3-4Ω	210-004	A-2905	A-3880	24S16	S-57Z①	① Drill New Mounting Hole.
T3	7200Ω CT	3-4Ω	210-004	A-2905	A-3880	24S16	S-57Z①	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA: CAPITOL PART No.	QUAM PART No.	NOTES
	SIZE	FIELD	V. C. IMP.			
SP1	8"x 13½"	PM	6-8Ω			* Horn Loaded
SP2	4"	PM	6-8Ω			‡ May be used in some versions.
SP3	8"x 13½"	PM	6-8Ω			
SP4	4"	PM	6-8Ω			
	15"	PM	14-16Ω	229-013 ‡		
	4"	PM	3-4Ω	229-014 ‡ *		

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA: CAPITOL PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.		SONOTONE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE
M1	380-018	13TB		26S	S1-1 S3-3			8TA4-SD	N-8TA-SD

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA: CAPITOL PART No.	JENSEN PART No.	REMARKS
M2		CS-1X † or CS-1XD †♦	† Jewel ♦ Diamond

MISCELLANEOUS

ITEM No.	PART NAME	CAPITOL PART No.	NOTES
M3	Switch	240-001	Selector

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	305-012	
Knob	305-013	With Spring
Cabinet	300-936M	Modern, Walnut
Cabinet	300-936T	Traditional, Mahogany
Door Pull	322-004	Traditional Cabinet
Knob	322-005	Cabinet, Traditional Cabinet
Knob	322-006	Cabinet, Modern Cabinet

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

PHOTOFACT® Folder

CORONADO
MODELS RA48-8357A, B

CORONADO
MODELS RA48-8357A, B

MODEL RA48-8357A

CORONADO
MODELS RA48-8357A, B

TRADE NAME	Coronado Models RA48-8357A, RA48-8357B
SUPPLIER	Gamble-Skogmo, Inc., 15 N. Eighth Street, Minneapolis 3, Minn.
TYPE SET	AC-DC Operated 6 Tube AM Receiver
POWER SUPPLY	110 - 120 Volts AC-DC
TUNING RANGE—BROADCAST	540 - 1650KC RATING 36 Watts, .48 Amp. @117 Volts AC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator.

Suggested Alignment Tools:
A1 thru A4...GENERAL CEMENT #5097, 8727
WALSCO #2515
A5, A6, A8...GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
A7..... GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to RF stator lug of tuning gang. Low side to chassis.	455KC (400∿ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	1650KC	"	"	A5	"
3.	"	540KC	Tuning gang fully closed.	"		Check for tuning range.
4.	Loop	1500KC	1500KC Signal.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
5.	"	600KC	600KC Signal.	"	A7	"
6.	"	1500KC	1500KC Signal.	"	A8	"

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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KG158

SET 508 FOLDER 7

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •)	ITEM No.	USE	TYPE (• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •)
V1	RF Amplifier	12BA6	V4	Det. -AVC-AF Amp.	12AV6
V2	Converter	12BE6	V5	Output	35C5
V3	IF Amplifier	12BA6	V6	Rectifier	35W4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA CORONADO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	100	150	150-142	PRS2240	BBRD8515	WD235	TDLD-14	TVAS-2463 *	
B	50	150							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	220		DI-220	DD-221	L10T22	CCD-221	B-322	10TS-T22
C3	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S5
C4	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S2
C5	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S2
C6	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P1
C7	220		DI-220	DD-221	L10T22	CCD-221	B-322	10TS-T22
C8	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S2
C9	10000		BPD-01	DD-103	BYA1081	CCD-103	B-110	5HK-S10
C10	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S5
C11	.1 200V		P288N-1	DF-104	CUB2P1	2DP-1-104	GEM-201	2TM-P1
C12	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S5
C13	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CORONADO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	4meg	1/2	120-137				PP46T26	Volume
	2meg Tap							
B	Switch						Not Req.	Push-Pull Off-On
R2A	100K	1/2	120-138	B-41	A47-100K-Z	Q13-128	U39	Tone
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	

RESISTORS (IRC or EQUIVALENT)

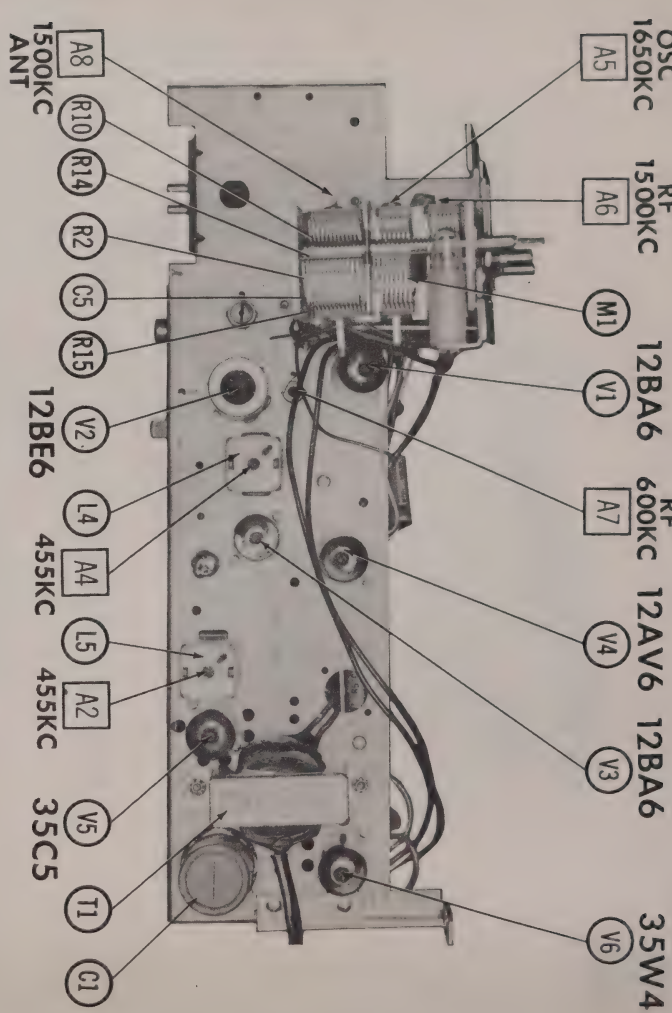
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	2.2meg	
R4	10K	
R5	330Ω	
R6	22K	
R7	2.2meg	
R8	220Ω	

ITEM No.	RATING	REMARKS
R9	330K	
R10	680Ω	
R11	6.8meg	
R12	470K	
R13	470K	
R14	4700Ω	

ITEM No.	RATING	REMARKS
R15	15K	
R16	1000Ω 1W	
R17	82Ω	
R18	150Ω	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	CORONADO PART No.	REPLACEMENT DATA
K1	Diode RF Filter	100mmf, 100mmf, 47K	166-107	Aerovox PA-97 Centralab PC-50 Cornell-Dubilier 1liTM1 Sprague D-1

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		CORONADO PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Loopstick	132-140A	BC-419	705-A		
L2	RF Trans.	132-139 ①				
L3	Osc. Coil	136-141A ②	BC-393	69-OSC	RTC-8646	
L4	Input IF Trans.	130-114	BC-352	12-C1	RTC-8632	
L5	Output IF Trans.	130-114	BC-353	12-C2	RTC-8633	

① Includes R4. ② Includes R6.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	CORONADO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2600Ω Tap ③ 3%	3-4Ω	138-141					
		SEC. 2						
		200Ω						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	CORONADO PART No.	QUAM PART No.	
SP1	6½"	PM	3-4Ω	175-139A *	6A15	* Alternate Part #175-139.

MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
M1	Tuning Cap.	160-130	3 Gang (Ant. 19-365mmf, 8-193mmf, Osc. 7-89mmf)
M2	Switch	125-111	Phono-Radio (SPDT Slide Type)

CABINETS & CABINET PARTS

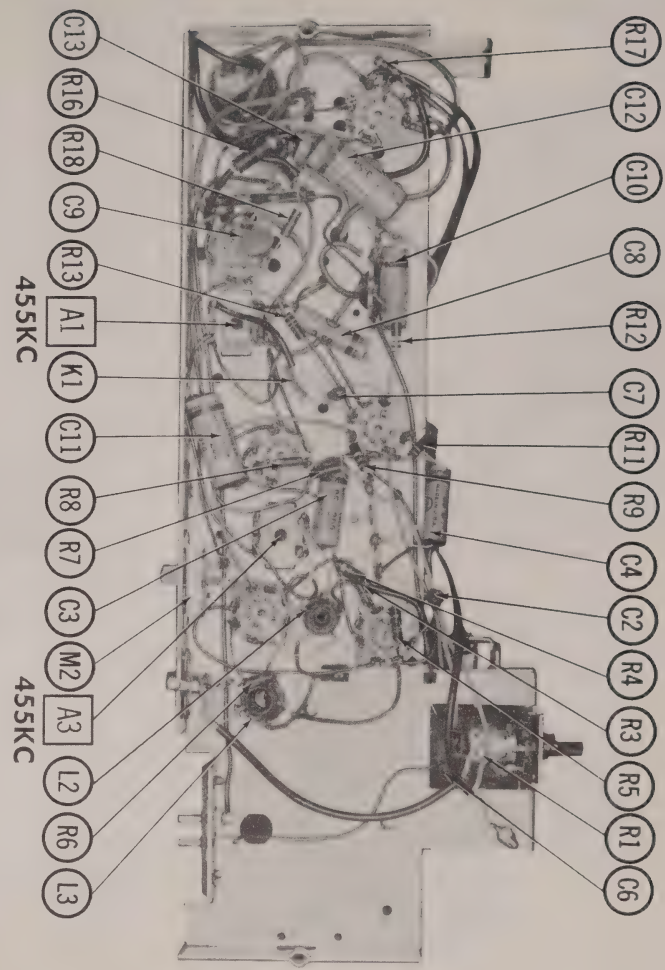
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

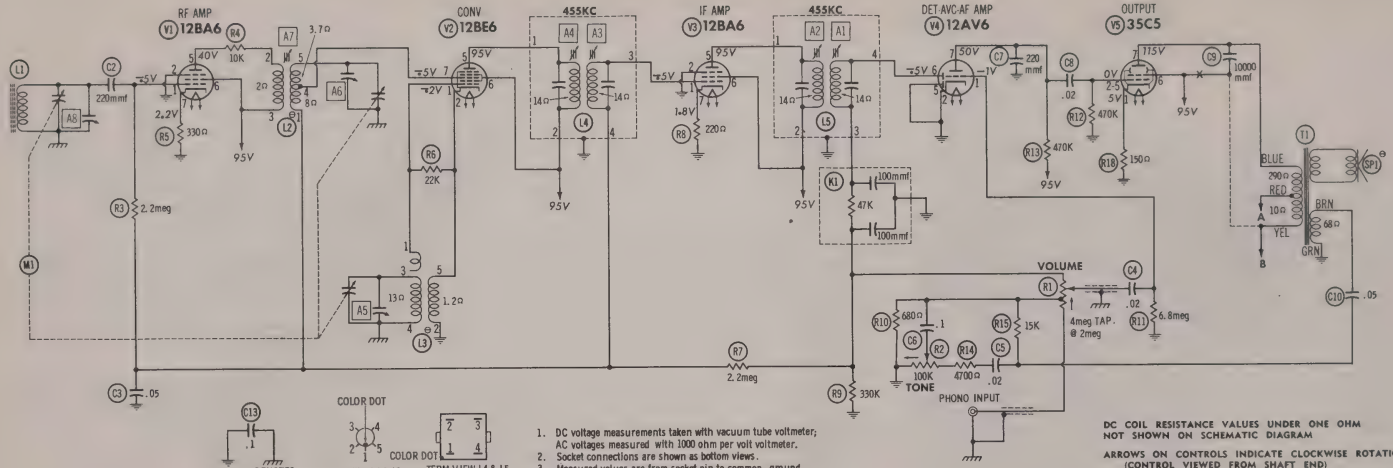
NAME	PART NO.	DESCRIPTION
Indicator Bar	215-165	Dial
Knob	220-199	Calibrated Disc
Knob	220-160	Tuning
Knob	220-157	Volume, Tone
Cabinet	210-157	Shell

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type) ..... Use BELDEN No. 8874

CHASSIS—BOTTOM VIEW





1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

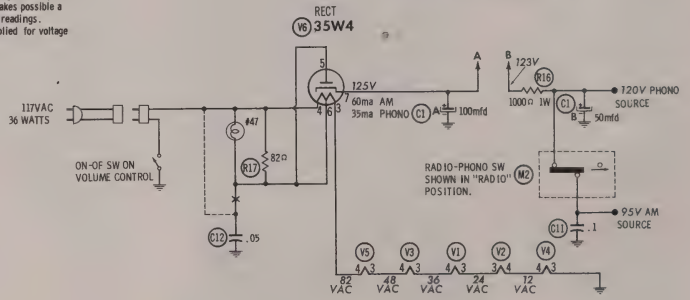
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BA6	4.7meg	0Ω	20Ω	30Ω	†11K	†1000Ω	330Ω
V2	12BE6	22K	1.2Ω	20Ω	10Ω	†1000Ω	†1000Ω	2.5meg
V3	12BA6	2.5meg	0Ω	30Ω	40Ω	†1000Ω	†1000Ω	220Ω
V4	12AV6	6.8meg	0Ω	0Ω	10Ω	0Ω	400K	†470K
V5	35C5	150Ω	470K	40Ω	80Ω	NC	†1000Ω	†290Ω
V6	35W4	TP	NC	80Ω	120Ω	115Ω	115Ω	¶

MEASURED IN "AM" POSITION
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V6.
NC NO CONNECTION
TP TIE POINT



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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CORONADO
MODELS RA48-8357A, B

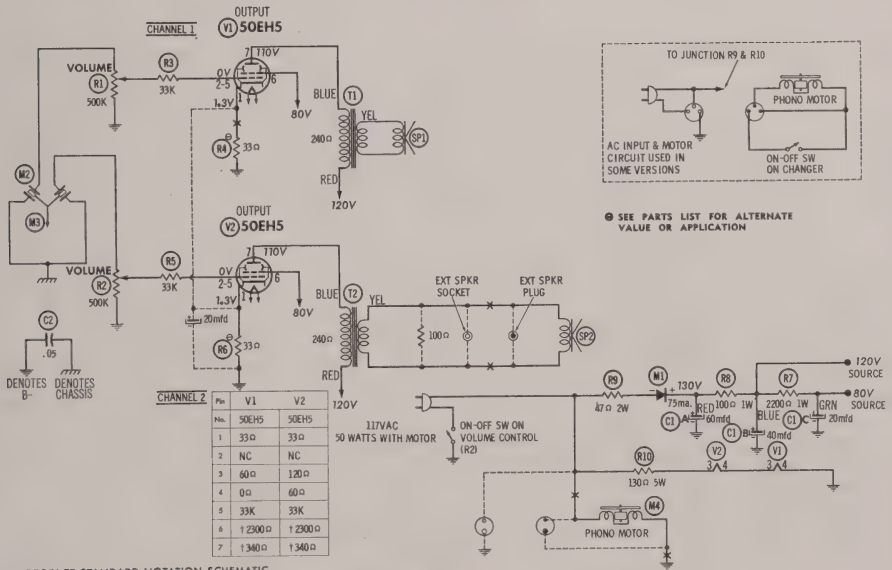
PHOTOFACT® Folder

DECCA MODELS DP-546, DP-584, DP-586, DPS-20

DECCA MODELS DP-546, DP-584, DP-586, DPS-20

DECCA MODELS DP-546, DP-584, DP-586, DPS-20

TRADE NAME	Decca Models DP-546, DP-584, DP-586, DPS-20
MANUFACTURER	Decca Distributing Corp., 445 Park Ave., New York 22, N. Y.
TYPE SET	AC Operated 2 Tube Stereo Phono Amplifier With 3 Speed Manual Record Player
POWER SUPPLY	110-120 Volts AC, 60 Cycles RATING 50 Watts, .55 Amp. @117 Volts AC (Less Motor)



Pin No.	V1 50EH5	V2 50EH5
1	33Ω	33Ω
2	NC	NC
3	60Ω	120Ω
4	0Ω	60Ω
5	33K	33K
6	†2300Ω	†2300Ω
7	†340Ω	†340Ω

A PHOTOFACT STANDARD NOTATION SCHEMATIC

† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION

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KR226

SET 508 FOLDER 8

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	• GENERAL ELECTRIC • RAYTHEON • SYLVANIA • USE	TYPE	ITEM No.	USE	TYPE
V1	Channel 1 Output	50EH5	V2	Channel 2 Output	50EH5

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA DECCA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	60	150		PRS3800	BBRT84215	TCT3119	TDLT-7	TVA-3455	
B	40	150							
C	20	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA DECCA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	½	VC-208	B-60	A47-500K-Z	Q13-133	U48	Volume, Channel 1
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R2A	500K	½	VC-157	B-60-S	A47-500K-Z	Q13-133	U48	Volume, Channel 2
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-12	76-1	US-26	Power Off-On

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	33K	Note 1
R4	33Ω	
R5	33K	

ITEM No.	RATING	REMARKS
R6	33Ω	Note 1
R7	2200Ω	
R8	100Ω 1W	

ITEM No.	RATING	REMARKS
R9	47Ω 2W	IRC#PW5-130Ω
R10	130Ω 5W	

Note 1. R4 and R6 may be combined in one 82Ω resistor.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA DECCA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	2100Ω	3-4Ω	TR-170	A-3025	A-3332	24S53	S-12X	
T2	2100Ω	3-4Ω	TR-170	A-3025	A-3332	24S53	S-12X	

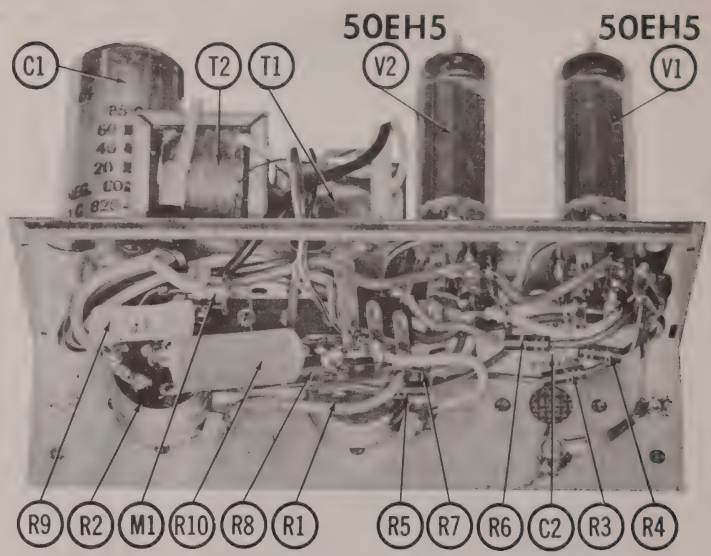
SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA DECCA PART No.	QUAM PART No.	NOTES
SP1	4"	PM	3-4Ω	SP-402	4A07Z4	
SP2	4"	PM	3-4Ω	SP-402	4A07Z4	

RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA DECCA PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.075A			1N1764	2F4	SR200	

CHASSIS—BOTTOM VIEW



PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA DECCA PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE
M2									

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA DECCA PART No.	REPLACEMENT DATA JENSEN PART No.	REMARKS
M3			

MISCELLANEOUS

ITEM No.	PART NAME	DECCA PART No.	NOTES
M4	Motor Idler Wheel		3 Speed (Turntable Drive, Part of Player) Walsco Part #1433

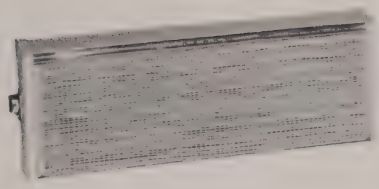
WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1795-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

PHOTOFACT® Folder

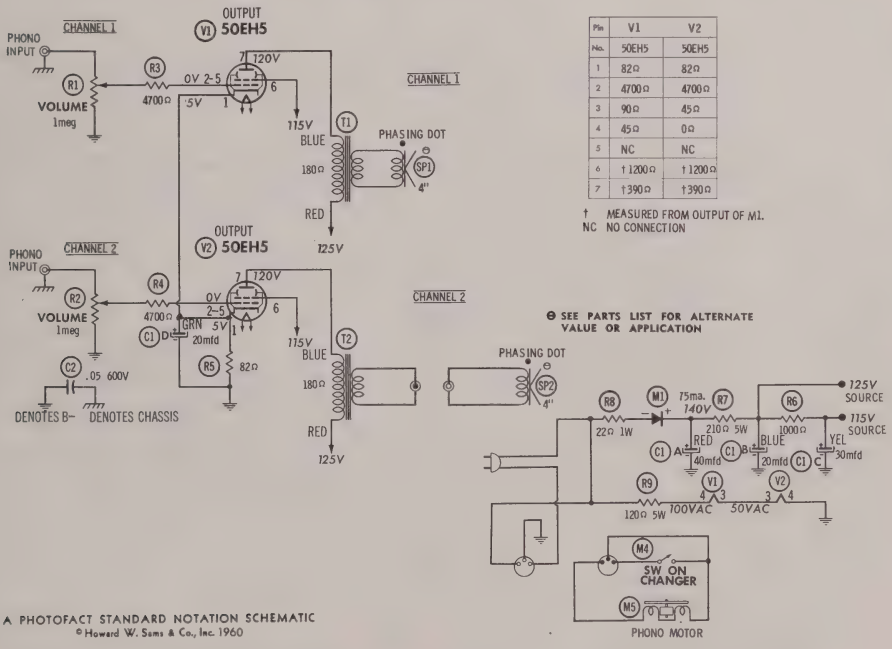
DECCA
MODEL DP-548

DECCA
MODEL DP-548



TRADE NAME	Decca Model DP-548
MANUFACTURER	Decca Distributing Corp., 445 Park Ave., New York 22, N. Y.
TYPE SET	AC Operated 2 Tube Stereo Phono Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	105 - 125 Volts AC, 60 Cycles RATING 26 Watts, .28 Amp. @117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER – SEE SIMILAR MONARCH UA8 – PHOTOFACT SET 381 FOLDER 11
OR RECORD CHANGER MANUAL RC-11



Pin No.	V1	V2
1	82Ω	82Ω
2	4700Ω	4700Ω
3	90Ω	45Ω
4	45Ω	0Ω
5	NC	NC
6	†1200Ω	†1200Ω
7	†390Ω	†390Ω

† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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SET 508 FOLDER 9

PARTS LIST AND DESCRIPTIONS

TUBES

◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Channel 1 Output	50EH5	V2	Channel 2 Output	50EH5

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA DECCA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	40	150	EC-21	PR4-200	BBRQ44315C	WQ230	CDB-Q-1001	TVA-3448 TVA-1410	
B	20	150							
C	30	150							
D	20	25							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	.05 600V		P688N-05	DD-503	CUB6S5	6DP-3-503	GEM-615	6TM-S50

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA DECCA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	½	VC-118	B-70	A47-1meg-Z	Q13-137	U53	Volume, Channel 1
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R2A	1meg	½	VC-118	B-70	A47-1meg-Z	Q13-137	U53	Volume, Channel 2
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	4700Ω	
R4	4700Ω	
R5	82Ω	

ITEM No.	RATING	REMARKS
R6	1000Ω	
R7	210Ω 5W	IRC#PW5-210Ω
R8	22Ω 1W	

ITEM No.	RATING	REMARKS
R9	120Ω 5W	IRC#PW5-120Ω

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA DECCA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	2400Ω	3-4Ω	AT-51	A-3025	A-3332	24S53	S-12X	
T2	2400Ω	3-4Ω	AT-51	A-3025	A-3332	24S53	S-12X	

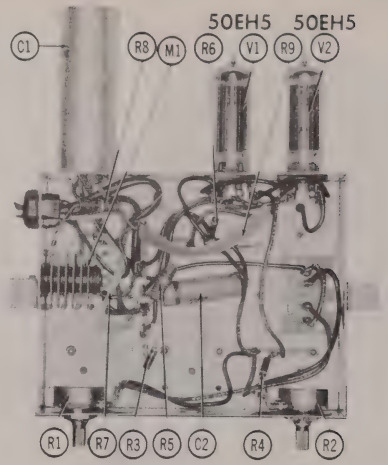
SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA DECCA PART No.	QUAM PART No.	NOTES
SP1	4"	PM	3-4Ω	SPK-38	4A1	* Used in some versions.
SP2	4"	PM	3-4Ω	SPK-38	4A1	
	5"	PM	3-4Ω	SPK-36 *	5A07	

RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA DECCA PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.075A	SR-4 *		1N1764 ♦	100A *	SR200 ♦	* Selenium Type ♦ Silicon Type

CHASSIS—BOTTOM VIEW



PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA DECCA PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE
M2	PU-46	70-TS-TB		96T				12TH-S	

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA DECCA PART No.	REPLACEMENT DATA JENSEN PART No.	REMARKS
M3		CRA-57 † or CRA-57D ♦ and CRA-57X † or CRA-57XD ♦	† Jewel ♦ Diamond

MISCELLANEOUS

ITEM No.	PART NAME	DECCA PART No.	NOTES
M4	Switch		Off-On (Part of Changer)
M5	Motor		Phono Drive (Part of Changer)

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

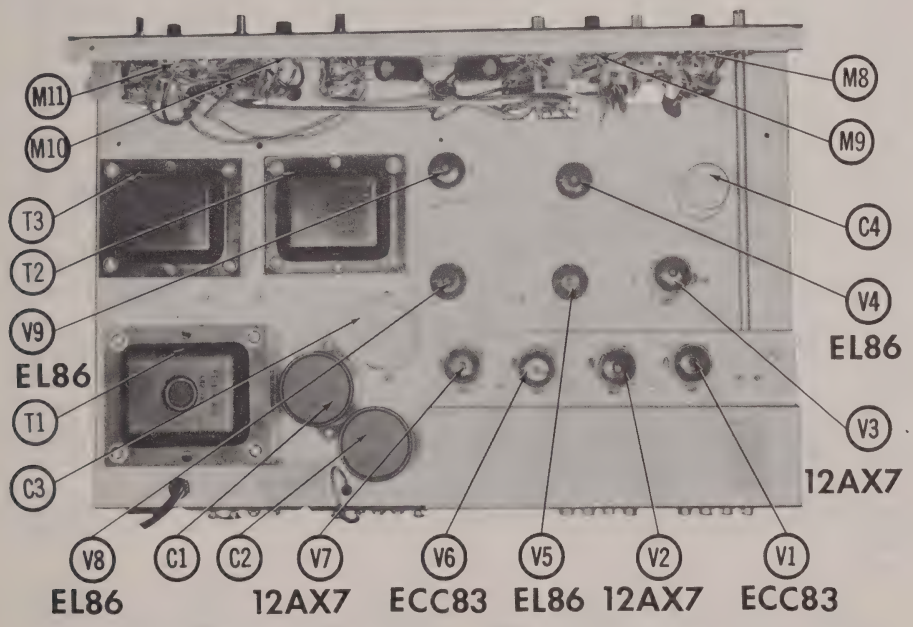
PHOTOFACT® Folder

**DE WALD
MODEL N-2200**

DE WALD
MODEL N-2200

DE WALD
MODEL N-2200

TRADE NAME	DeWald Model N-2200
MANUFACTURER	DeWald, A Div. of United Scientific Laboratories Inc., 35-15 37th Ave., Long Island City 1, N. Y.
TYPE SET	AC Operated 9 Tube Stereo Amplifier
POWER SUPPLY	105-125 Volts AC, 60 Cycles RATING 100 Watts, 1 Amp. @117 Volts AC



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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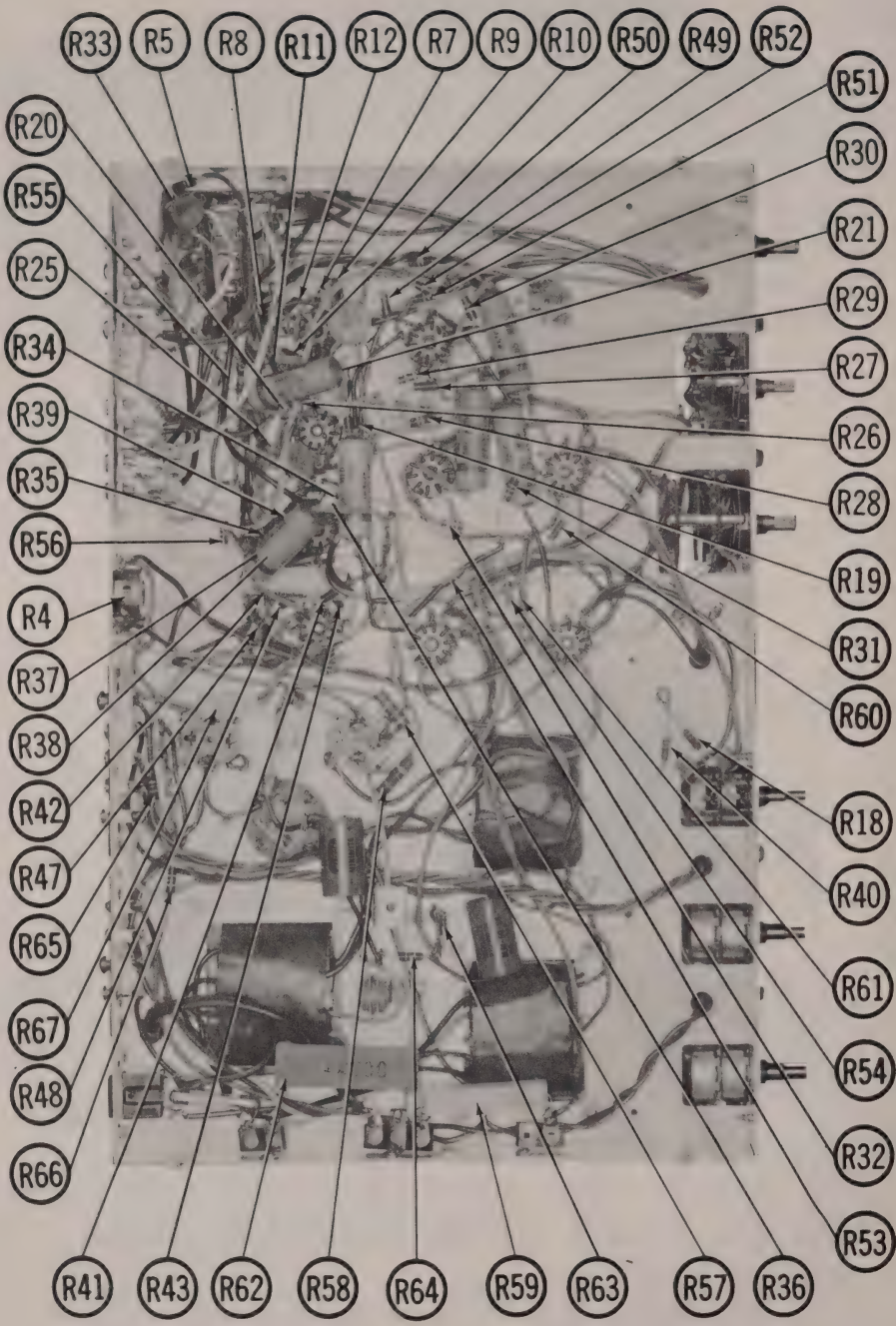
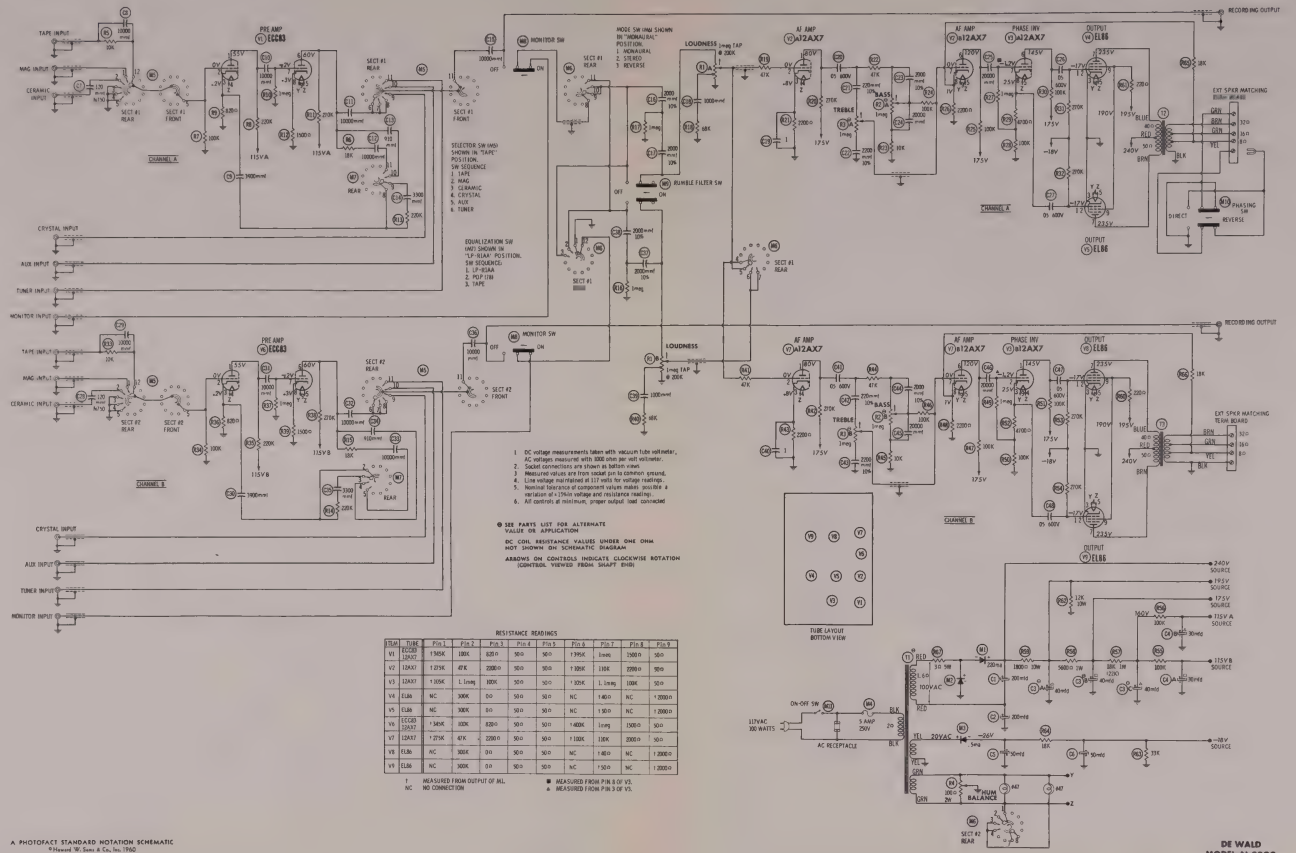
KV194

SET 508 FOLDER 10



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



1. DC voltage measurements taken with vacuum tube voltmeter, AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom view.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±10% in voltage and resistance readings.
6. All controls at minimum, proper output load connected

● SEE PARTS LIST FOR ALTERNATE VALUES OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC83 12AX7	†345K	100K	825Ω	50Ω	50Ω	†395K	1meg	1500Ω	50Ω
V2	12AX7	†275K	47K	2200Ω	50Ω	50Ω	†325K	330K	2200Ω	50Ω
V3	12AX7	†325K	1. 1meg	100K	50Ω	50Ω	†325K	1. 1meg	100K	50Ω
V4	EL86	NC	300K	0Ω	50Ω	50Ω	NC	†40Ω	NC	†2000Ω
V5	EL86	NC	300K	0Ω	50Ω	50Ω	NC	†50Ω	NC	†2000Ω
V6	ECC83 12AX7	†345K	100K	820Ω	50Ω	50Ω	†400K	1meg	1500Ω	50Ω
V7	12AX7	†275K	47K	2200Ω	50Ω	50Ω	†330K	330K	2000Ω	50Ω
V8	EL86	NC	300K	0Ω	50Ω	50Ω	NC	†40Ω	NC	†2000Ω
V9	EL86	NC	300K	0Ω	50Ω	50Ω	NC	†50Ω	NC	†2000Ω

† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION

■ MEASURED FROM PIN 8 OF V3.
▲ MEASURED FROM PIN 3 OF V3.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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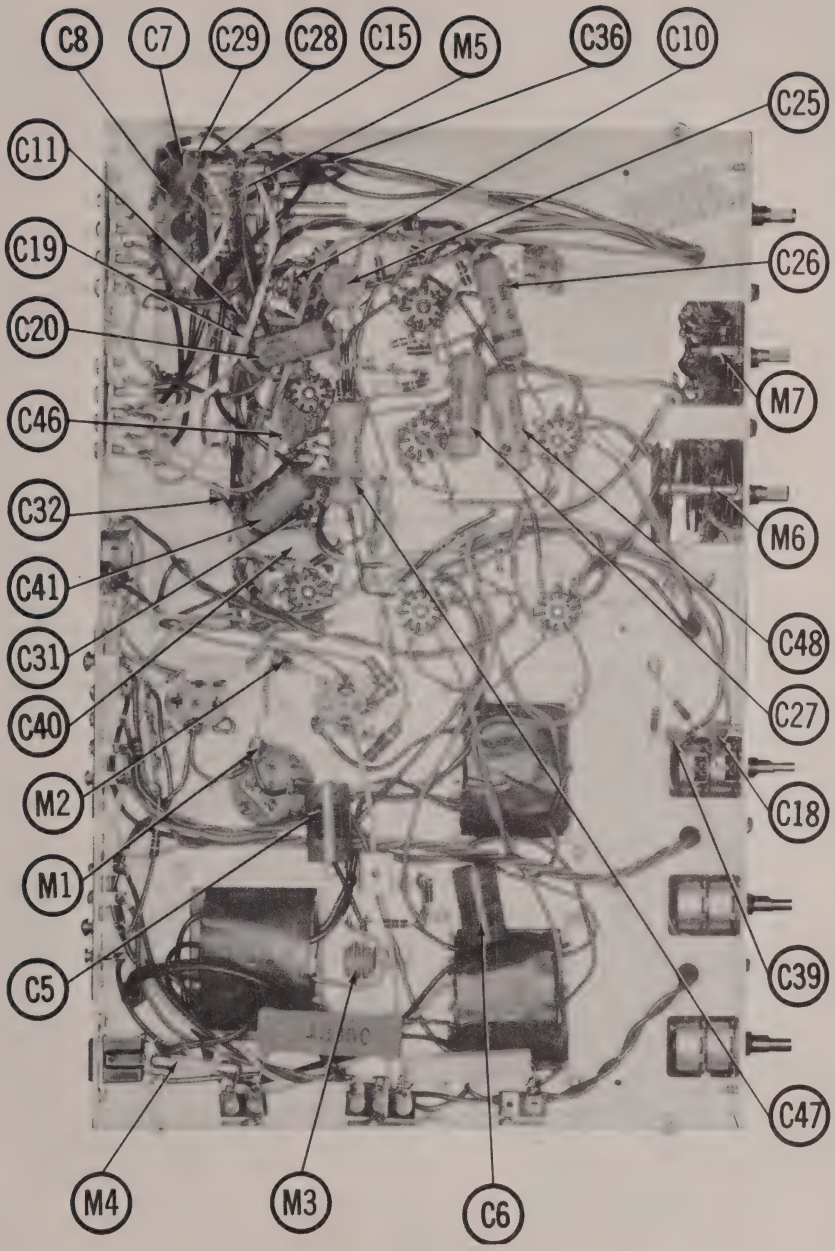
DE WALD
MODEL N-2200



CHASSIS BOTTOM VIEW - CAPACITOR & MISC. IDENT.

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •)	ITEM No.	USE	TYPE (• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •)
V1	Channel A Preamp.	ECC83/12AX7	V5	Channel A Output	EL86
V2	Channel A AF Amp.	12AX7	V6	Channel B Preamp.	ECC83/12AX7
V3	Channel A Phase Inv. - Channel B Phase Inv.	12AX7	V7	Channel B AF Amp.	12AX7
			V8	Channel B Output	EL86
V4	Channel A Output	EL86	V9	Channel B Output	EL86

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA DeWALD PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	200	200	E-225-2	AFHSi-37-30	XA0318	FP126	TMS-1490	TVL-1547	
C2	200	200	E-225-2	AFHSi-37-30	XA0318	FP126	TMS-1490	TVL-1547	
C3A	▲40	350	E-212-10	AFH4-56			TMQ-4256	TVL-3787	
B	■40	350						TVA-1207	
C	▲40	350							
D	100	25							Note 1
C4A	■30	200	E-212-9	AFH2-27	B0220	FP227.3	TMD-2240	TVL-2517	
B	▲30	200							
C5	50	25							
C6	50	25	E-215-7	PRS1265	BBR50-25	TC29	TD-50-25	TVA-1206	
			E-215-7	PRS1265	BBR50-25	TC29	TD-50-25	TVA-1206	

Note 1. C3D is not used.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C7	120 N750		N750-DI 120	DTN-120	C10T12U	CCTN-120	CN7-312	10TCU-T12
C8	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C9	3900		BPD-004	DD-392	L10D39	CCD-392	GP239	10TS-D39
C10	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C11	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C12	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C13	910			DD-911	L10T91	CM-19B-911M		1FM-391
C14	3300		BPD-0033	DD-332	BYA10D33	CCD-332	B-233	5HK-D33
C15	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C16	2000 10%		DI-2000		CUB6D2	CCD-202	GP220	10TS-D20
C17	2000 10%		DI-2000		CUB6D2	CCD-202	GP220	10TS-D20
C18	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	2TM-D10
C19	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	6TM-P10
C20	.05 600V		P688N-05	DD-503	CUB6S5	6DP-3-503	GEM-615	10TS-S50
C21	220 10%		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C22	2200 10%		DI-2200		PM6D22	CCD-222	GP222	10TS-D22
C23	2000 10%		DI-2000		PM6D2	CCD-202	GP220	10TS-D22
C24	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C25	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C26	.05 600V		P688N-05	DD-503	CUB6S5	6DP-3-503	GEM-615	6TM-S50
C27	.05 600V		P688N-05	DD-503	CUB6S5	6DP-3-503	GEM-615	6TM-S50
C28	120 N750		N750-DI 120	DTN-120	C10T12U	CCTN-121	CN7-312	10TCU-T12
C29	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C30	3900		BPD-004	DD-392	L10D39	CCD-392	GP392	10TS-D39
C31	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C32	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C33	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C34	910			DD-911	L10T91	CM-19B-911M		1FM-391
C35	3300		BPD-0033	DD-332	BYA10D33	CCD-332	B-233	5HK-D33
C36	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C37	2000 10%		DI-2000		CUB6D2	CCD-202	GP220	10TS-D20
C38	2000 10%		DI-2000		CUB6D2	CCD-202	GP220	10TS-D20
C39	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C40	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C41	.05 600V		P688N-05	DD-503	CUB6S5	6DP-3-503	GEM-615	6TM-S50
C42	220 10%		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C43	2200 10%		DI-2200		PM6D22	CCD-222	GP222	10TS-D22
C44	2000 10%		DI-2000		PM6D2	CCD-202	GP220	10TS-D22
C45	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C46	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C47	.05 600V		P688N-05	DD-503	CUB6S5	6DP-3-503	GEM-615	6TM-S50
C48	.05 600V		P688N-05	DD-503	CUB6S5	6DP-3-503	GEM-615	6TM-S50

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA DeWALD PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg 200K Tap	½	V-324A-3					Loudness, Channel A
B	1meg 200K Tap	½						Loudness, Channel B
R2A	1meg	½	V-323-5①	F1-51			■ UE4139	Bass, Channel A
B	1meg	½		R2-51				Bass, Channel B
R3A	1meg	½	V-323-6②	F1-51			■ UE4139	Treble, Channel A
B	1meg	½		R2-51				Treble, Channel B
R4A	100Ω	2(WW)		WN-101	A43-100	W11-084	FL100P	Hum Balance
B	Shaft			Not Req.	FKS-1/4	SK5	Not Req.	

① Some versions may use Part #V-323-4.
② Some versions may use Part #V-323-3.
■ "STA-LOC" equivalent: FB16L, RU16L, OS562A, IS875.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R5	10K	
R6	18K	
R7	100K	
R8	220K	
R9	820Ω	
R10	1meg	
R11	270K	
R12	1500Ω	
R13	220K	
R14	220K	
R15	18K	
R16	1meg	
R17	1meg	
R18	68K	
R19	47K	
R20	270K	
R21	2200Ω	
R22	47K	
R23	10K	
R24	100K	
R25	100K	

ITEM No.	RATING	REMARKS
R26	2200Ω	
R27	1meg	
R28	100K	
R29	4700Ω	
R30	100K	
R31	270K	
R32	270K	
R33	10K	
R34	100K	
R35	220K	
R36	820Ω	
R37	1meg	
R38	270K	
R39	1500Ω	
R40	68K	
R41	47K	
R42	270K	
R43	2200Ω	
R44	47K	
R45	10K	
R46	100K	

ITEM No.	RATING	REMARKS
R47	100K	
R48	2200Ω	
R49	1meg	
R50	100K	
R51	100K	
R52	4700Ω	
R53	270K	
R54	270K	
R55	100K	
R56	100K	
R57	18K 1W	(22K) *
R58	5600Ω 1W	
R59	1800Ω 10W	IRC#PW10-1800Ω
R60	220Ω	
R61	220Ω	
R62	12K 10W	IRC#PW10-12K
R63	33K	
R64	18K	
R65	18K	
R66	18K	
R67	3Ω 5W	IRC#PW5-3Ω

* Alternate Value.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA DeWALD PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V ⓐ 1A	100V ⓐ .750A AC	6.3V ⓐ 4.8A	PT-174-A-2①					
	SEC. 3	SEC. 4	SEC. 5						
	20V ⓐ .002A AC								

① Alternate Part #PT-174A-1

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	DeWALD PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	3000ΩCT	32Ω Tap ⓐ 16Ω, 8Ω	T-173-6			22S21		
T3	3000ΩCT	32Ω Tap ⓐ 16Ω, 8Ω	T-173-5			22S21		

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DeWALD PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.220A	*		1N1764 *	F6 *	SR500 *	* Silicon Type
M2	.220A	*		1N1764 *	F6 *	SR500 *	♦ Selenium Type
M3	.0005A	♦			12 ♦		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			DeWALD PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M4	3AG	5A 250V P/T			318005 (3AG 5A 250V)		MDV5	

MISCELLANEOUS

ITEM No.	PART NAME	DeWALD PART No.	NOTES
M5	Switch	BS-836-7	Selector (Rotary Wafer Type)
M6	Switch	BS-841-2	Mode (Rotary Wafer Type)
M7	Switch	BS-836-5	Equalization (Rotary Wafer Type)
M8	Switch		Monitor (Off-On) (DPDT Slide Type)
M9	Switch		Rumble Filter (Off-On) (DPDT Slide Type)
M10	Switch		Phasing (A-B) (DPDT Slide Type)
M11	Switch		Power Off-On (SPDT Slide Type)

CABINETS & CABINET PARTS

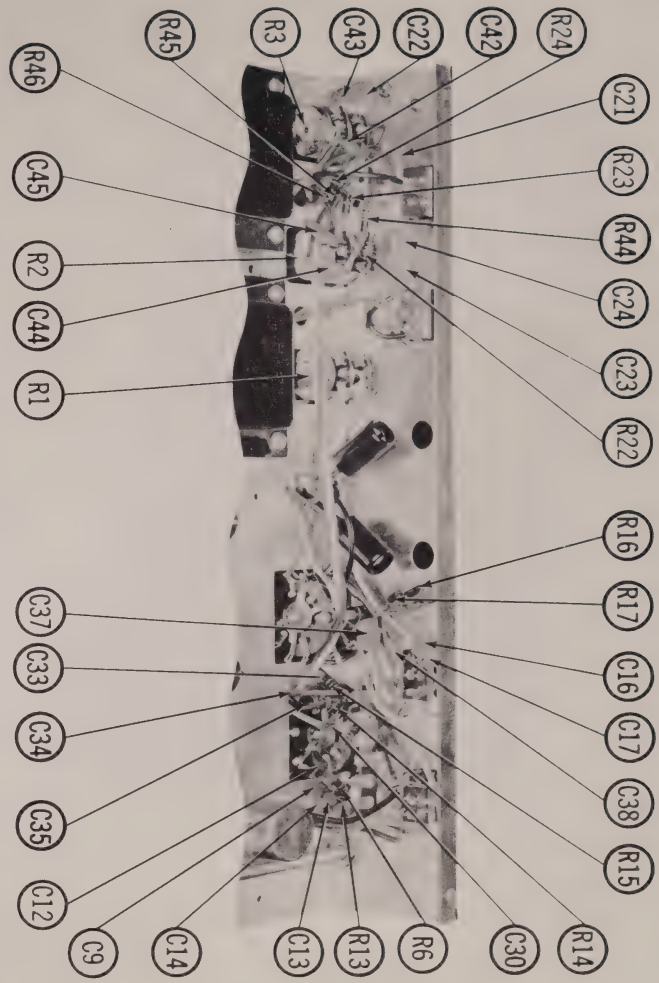
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	K-494-1	Large, Outer, Loudness, Bass, Treble
Knob	K-494-2	Small, Inner, Loudness, Bass, Treble
Knob	K-493-1	Mode, Equalization, Selector

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No.	1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)

CONTROL PANEL REAR



PHOTOFACT® Folder with CIRCUITRACE®

GENERAL ELECTRIC
MODELS P790A, B, P791A, B

GENERAL ELECTRIC
MODELS P790A, B, P791A, B

MODEL P791A

GENERAL ELECTRIC
MODELS P790A, B, P791A, B

TRADE NAME	General Electric Models P790A, P790B, P791A, P791B
MANUFACTURER	General Electric Co., Product Service, Radio Receiver Dept., 869 Broad Street, Utica, N. Y.
TYPE SET	Battery Operated Transistorized Portable AM Receiver
POWER SUPPLY	9 Volts DC RATING 6MA@9 Volts DC (No Signal, Minimum Volume) 20MA@9 Volts DC (Signal, Normal Volume)
TUNING RANGE—BROADCAST	540 - 1630KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:
A1, A2, A3... GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291
WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538
A4, A5..... GENERAL CEMENT #5000, 5003, 8276, 8290
WALSCO #2512, 2522, 2523, 2525, 2537, 2515
A6..... GENERAL CEMENT #8282, 8606, 8606-L, 9091
WALSCO #2526, 2541, 2542, 2543, 2544

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1630KC	"	"	A4	"
3.	"	1400KC	1400KC Signal	"	A5	Adjust for maximum output while rocking tuning gang.
4.	"	580KC	580KC Signal	"	A6	"

SET 508 FOLDER 11

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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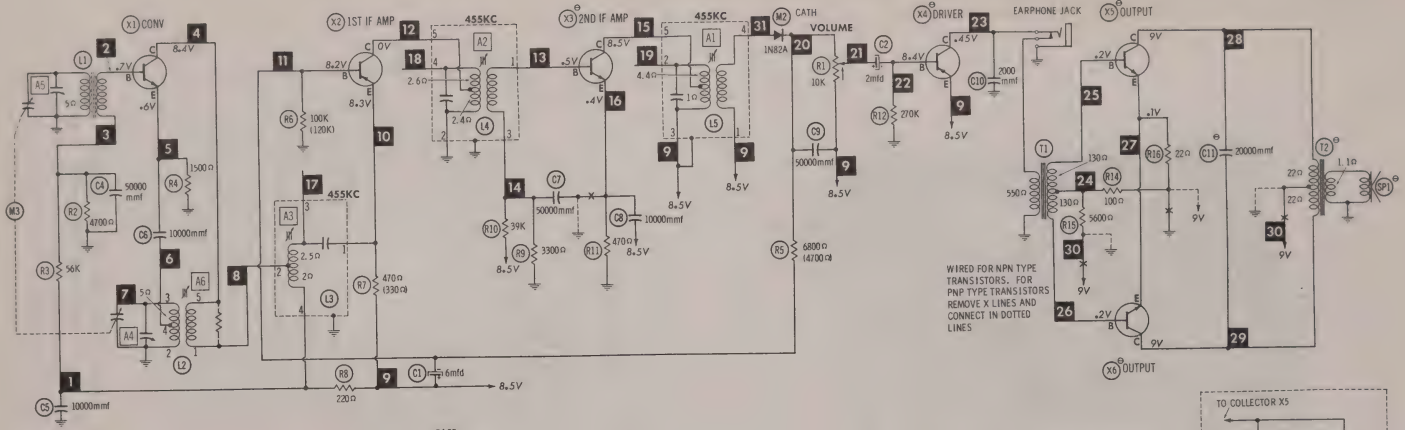
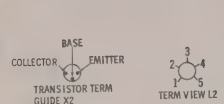




NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

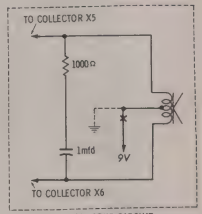
❶ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

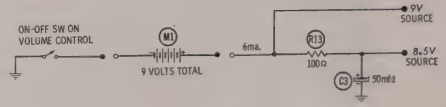
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

RESISTANCE MEASUREMENTS FOR X1 THRU X6 NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.



ALT SPKR CIRCUIT WHEN MAGNETIC SPKR IS USED



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GENERAL ELECTRIC
MODELS P790A, B, P791A, B

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	MFG. PART NO.	USE	REPLACEMENT DATA: RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
X1	RS-1531	Conv. (2N1058)		2N1366		NPN
X2	RS-1550	1st IF Amp. (GT-760R)		2N483		PNP
X3	RS-1537①	2nd IF Amp. (2N233①)		2N1367	2N233A	NPN
X4	RS-1543	Driver (S025②)		2N362		PNP
X5	RS-1549	Output (2N1059③)	2N649	2N632	2N1059	NPN Matched
X6	RS-1549	Output (2N1059③)	2N649	2N632	2N1059	NPN Pair

① Alternate Types 2N293 or 2N292. Alternate Part #RS-1532, RS-1545
② Alternate Type 2N406
③ Alternate Type 2N408 (PNP) Part #RS-1548

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP.	RATING: VOLT.	REPLACEMENT DATA: G. E. PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	6	15	RS-2614	XPP-15006	NLW6-25	TT25X6	ML6-15	TE-1153	
C2	2	25	RS-2615	XPP-25002	NLW2-100	TC302	ML2-25	TE-1201	
C3	50	12	RS-2286	BCD12050	ECPB415	PET1575		VL-1134	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	50000		C80V503AM	DDA-503	H-05S5		TA-150	TG-S50
C5	10000		C80V103AM	DDM-103	H-05S1		TA-110	TG-S10
C6	10000		C80V103AM	DDM-103	H-05S1		TA-110	TG-S10
C7	50000		C80V503AM	DDA-503	H-05S5		TA-150	TG-S50
C8	10000		C80V103AM	DDM-103	H-05S1		TA-110	TG-S10
C9	50000		C80V503AM	DDA-503	H-05S5		TA-150	TG-S50
C10	2000		BPD-002	DM-202	BYA10D2	CCD-202	B-220	5HK-D20
C11	20000	Note 1	C80V203AM	DDM-203	H-05S2		TA-120	TG-S20

Note 1. "B" versions use 10000mmf in this application. When magnetic-type speaker is used, value is 1mfd

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: G. E. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1	10K	1/4	RS-2586					Volume & Switch

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	4700Ω	
R3	56K	
R4	1500Ω	
R5	6800Ω	(4700Ω) *
R6	100K	(120K) *

ITEM No.	RATING	REMARKS
R7	470Ω	(330Ω) *
R8	220Ω	
R9	3300Ω	
R10	39K	
R11	470Ω	

ITEM No.	RATING	REMARKS
R12	270K	
R13	100Ω	
R14	100Ω	
R15	5600Ω	
R16	22Ω	

* Alternate Value.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: G. E. PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	Loopstick	RS-2584				
L2	Osc. Coil	RS-2583				
L3	1st IF Trans.	RS-2580				
L4	2nd IF Trans.	RS-2581				
L5	3rd IF Trans.	RS-2582				

PRINTED BOARD

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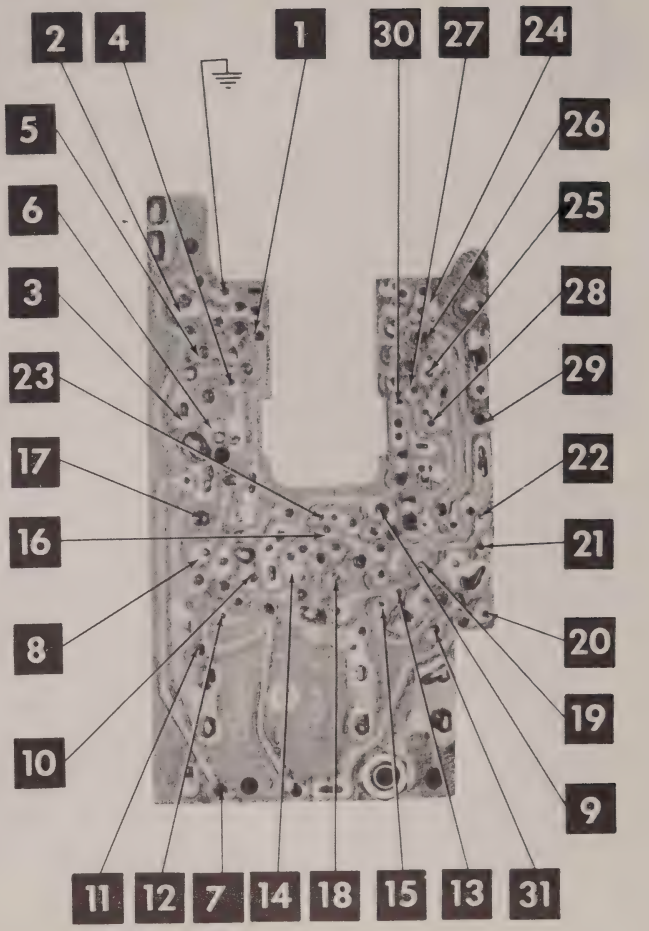


GENERAL ELECTRIC
MODELS P790A, B, P791A, B

FOLDER 11

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	G. E. PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	4.1	1	RS-2578					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	G. E. PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	900Ω CT	14-16Ω	RS-2579①					① "A" version only.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	G. E. PART No.	QUAM PART No.	
SP1	2 3/4"	PM	14-16Ω	RS-1911 *	27A06Z16	* "B" versions use magnetic-pole speaker

BATTERIES

ITEM No.	VOLTAGE	G. E. PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V			P6		226		M-1600	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		G. E. PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N82A	RS-1811	1N82A	1N82A	Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	G. E. PART No.	NOTES
M3	Tuning Cap.	RS-2585	2 Gang

CABINETS & CABINET PARTS

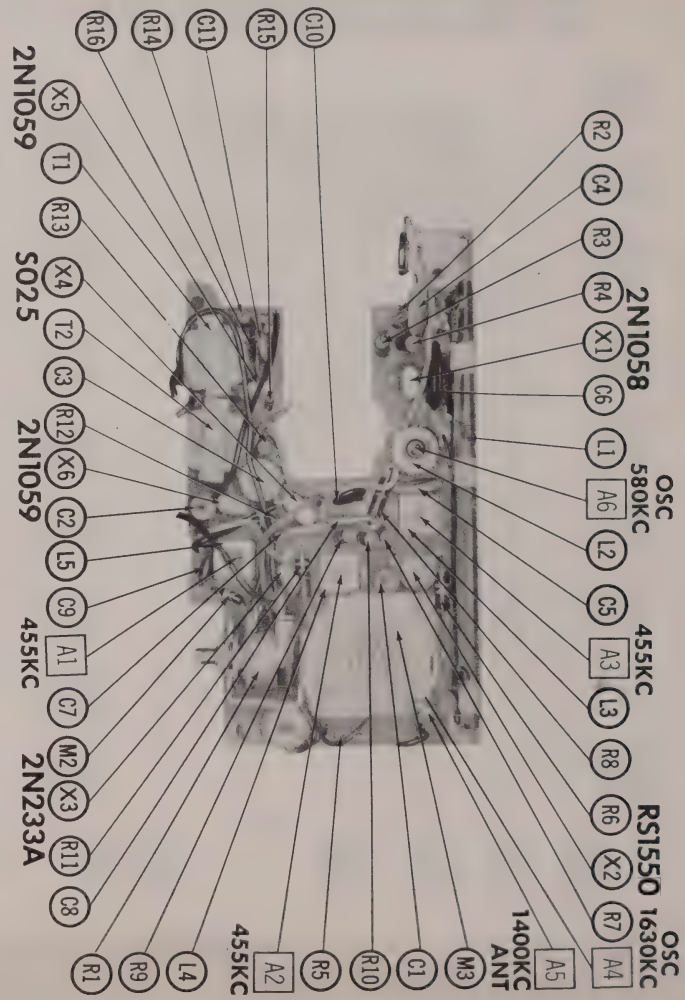
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob Ass'y.	RS-2568	Tuning
Knob	RS-2567	Volume
Cabinet	RB-1151	Front Assembly, White, Includes Grille and Cloth
Cabinet	RB-1152	Back Assembly, Black, Model P790A
Cabinet	RB-1153	Back Assembly, Turquoise, Model P791A
Grille	RS-2566	

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

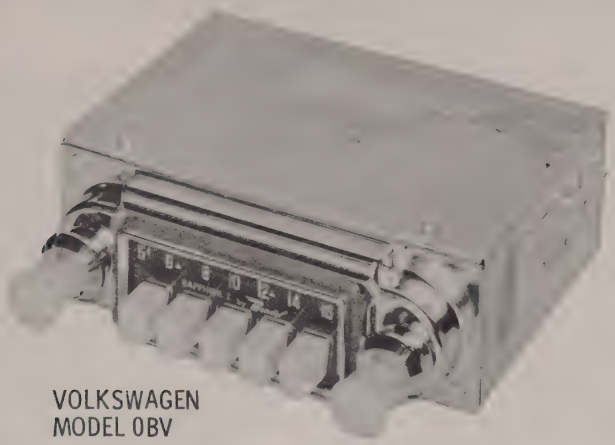
CHASSIS—TOP VIEW



PHOTOFACT® Folder with CIRCUITRACE®

KARMANN GHIA MODEL OBG
VOLKSWAGEN MODELS OBT, OBV

KARMANN GHIA MODEL OBG
VOLKSWAGEN MODELS OBT, OBV



VOLKSWAGEN
MODEL OBV

KARMANN GHIA MODEL OBG
VOLKSWAGEN MODELS OBT, OBV

TRADE NAME	Karmann GHIA Model OBG; Volkswagen Models OBT, OBV (Sapphire I)
MANUFACTURER	Bendix Radio Div., Bendix Aviation Corp., Baltimore 4, Maryland
TYPE SET	Battery Operated Transistorized Custom Built Automobile AM Receiver
POWER SUPPLY	6 Volt Storage Battery RATING 1.1 Amp. @6.3 Volts DC
TUNING RANGE—BROADCAST	540 — 1605KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:
A1 thru A4... GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
A5, A6..... GENERAL CEMENT #5000, 5003, 5066, 8271, 8272, 8276, 8277, 8290, 8609, 8722, 9150, 9298
WALSCO #2515, 2516, 2518, 2519, 2525, 2541
A7, A8..... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528
A9 thru A12.. GENERAL CEMENT #9050-L, 9150
WALSCO #2521, 2524

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to collector of RF Amp. Low side to chassis.	262.5KC	High end stop.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1605KC	"	"	A5, A6, A7, A8	"
	Step 3 is not necessary unless a tuning coil or core has been replaced. If necessary, turn tuning core (A9, A10, A11 and A12) out of coils to where they just remain in coil forms. Repeat Step 2.					
3.	Thru dummy to antenna receptacle.	1000KC	Tuner carriage .385" from high end stop.	Across voice coil.	A9, A10, A11, A12	Adjust for maximum output.
4.	With radio installed in car and antenna fully extended, tune in a weak station near 1600KC and adjust A8 for maximum output.					

PUSHBUTTON ADJUSTMENT

1. Pull Pushbutton out.
2. Tune manually to desired station.
3. Press Pushbutton in firmly.
4. Repeat for remaining Pushbuttons.

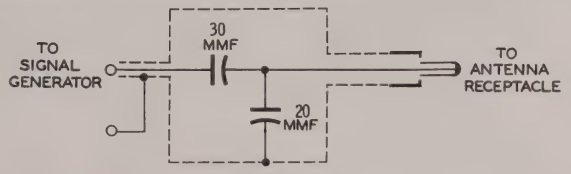


FIG. 1

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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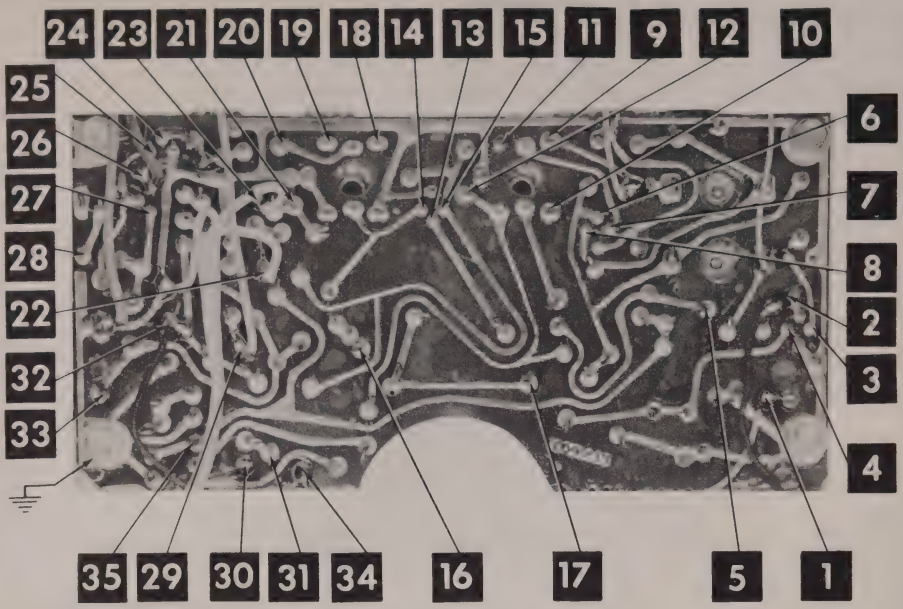
SET 508 FOLDER 12



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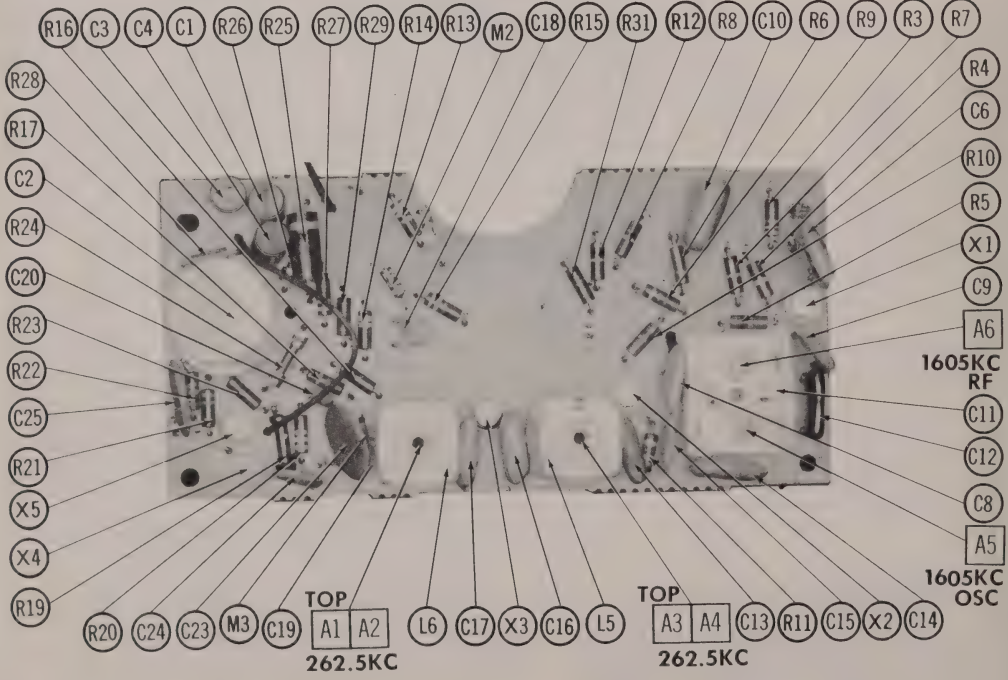
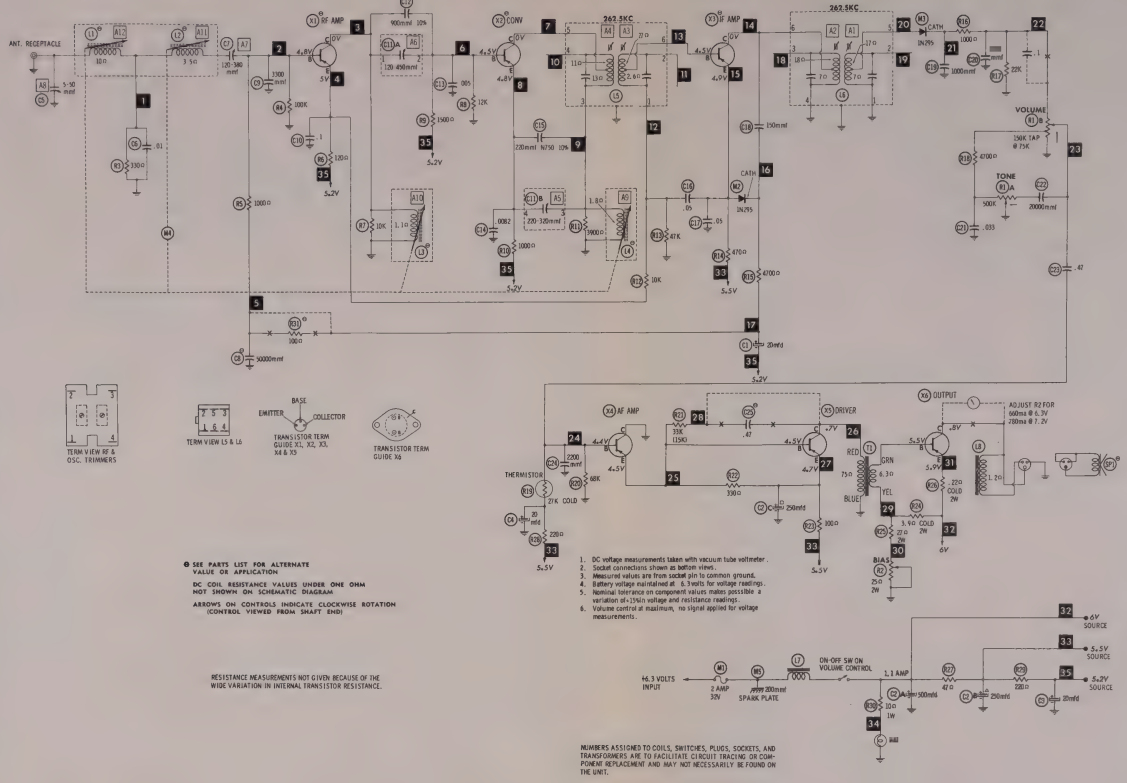
PRINTED BOARD



PRINTED BOARD



● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Battery voltage maintained at 6.3 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

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KARMANN GHIA MODEL 08G
VOLKSWAGEN MODELS 08T, 08V

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	MFGR. PART NO.	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2091241-1*	RF Amp.	2N640			PNP
X2	2091241-2†	Converter	2N642			PNP
X3	2091241-3♦	IF Amp.	2N641			PNP
X4	2090924-7	AF Amp. (2N1287A)	2N591	2N362		PNP
X5	2090924-7	Driver (2N1287A)	2N591	2N362		PNP
X6	2090056-2	Output (B-1106)				PNP

* Some versions may use Part #2091241-4.
† Some versions may use Part #2091241-5.
♦ Some versions may use Part #2091241-6.

ELECTROLYTIC CAPACITORS

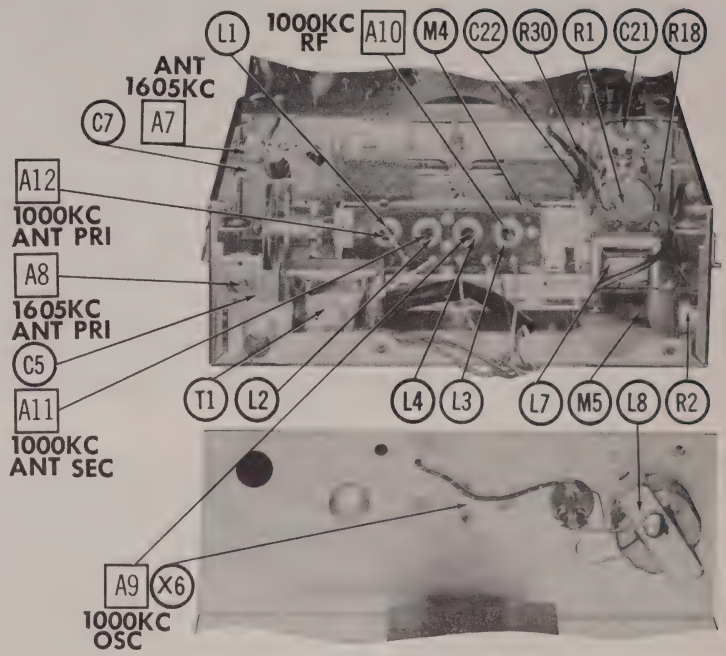
ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	BENDIX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	20	16	2090480-2	BCD25020	ECPB610	PET1570		VL-1209	
C2A	500	8	220353-18	PR3-007					
B	▲250	8							
C	■250	8							
C3	20	16	2090480-2	BCD25020	ECPB610	PET1570		VL-1209	
C4	20	16	2090480-2	BCD25020	ECPB610	PET1570		VL-1209	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	5-50	#2091221-1				462		
C6	.01 100V		P288N-01	D6-103	CUB2S1	1DP-1-103	GEM-411	2TM-S10
C7	120-380	#2091221-2				465		
C8	50000	Note 1	BPD-05	DD-503	CUB2S5	1DP-2-503	GP150	5HK-S50
C9	3300		BPD-0033	DD-332	BYA10D33	CCD-332	B-332	5HK-D33
C10	.1 100V		P288N-1	DF-104	CUB2P1	1DP-2-104	GEM-201	2TM-P10
C11A	120-450	#219092-10						
B	220-320							
C12	900 10%		1464-0009		5R5T9	CM-19B-911K		MS-391
C13	.005 100V		P288N-005	D6-502	CUB6D5	6DP-1-502	GEM-625	6TM-D50
C14	.0082 100V		P684CM-0082	DD-822	DPMS6D82	6DP-2-822	GEM-16282	6DP-D82
C15	220 N750 10%		N750-DI 220	DTN-220	C10T22U	CCTN-221	CNO-322	10TCU-T22
C16	.05 100V		P288N-05	DD-503	CUB2S5	2DP-2-503	GEM-415	2TM-S50
C17	.05 100V		P288N-05	DD-503	CUB2S5	2DP-2-503	GEM-415	2TM-S50
C18	150		DI-150	DD-151	L10T15	CCD-151	B-315	10TS-T15

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C19	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C20	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C21	.033 100V		P288N-033	DD-303	CUB6S33	IDP-1-333	GEM-4133	4PS-S33
C22	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-D20
C23	.47 10V			UK10-474				HY-330
C24	2200		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C25	.47 10V	Note 2		UHK-474				HY-330

Note 1. Early versions use .47mfd in this application.

Note 2. Used in late versions only.

Bendix Part Number.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	BENDIX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	500K		2091245-1				■ UE4178-S	Tone
B	150K							Volume
	75K Tap							
C	Switch							Power Off-On
R2	25Ω	2(WW)	219555-12		39-50	112-50		Bias

■ "STA-LOC" equivalent: FB55L, RU154T653, OS1312, IS1875, US41.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	330Ω	
R4	100K	
R5	1000Ω	
R6	120Ω	
R7	10K	
R8	12K	
R9	1500Ω	
R10	1000Ω	
R11	3900Ω	
R12	10K	

ITEM No.	RATING	REMARKS
R13	47K	
R14	470Ω	
R15	4700Ω	
R16	1000Ω	
R17	22K	
R18	4700Ω	
R19	27K Cold	Pt. #220629-10
R20	68K	
R21	33K	(15K) *
R22	330Ω	

ITEM No.	RATING	REMARKS
R23	100Ω	
R24	3.9Ω Cold 2W	Pt. #2090948-9
R25	27Ω 2W	
R26	.22Ω Cold 2W	Pt. #2090948-7
R27	47Ω	
R28	220Ω	
R29	220Ω	
R30	10Ω 1W	
R31	100Ω	Note 1

Note 1. Not used in early versions, but may be required if X1 or X3 is replaced with higher gain transistor.

* Alternate Value.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		BENDIX PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Ant. Coil	①				① Part of M4
L2	Ant. Coil	①				
L3	RF Coil	①				
L4	Osc. Coil	①				
L5	Input IF Trans.	2091217-1				
L6	Output IF Trans.	2091218-1				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE @ CURRENT 1000 ∿	BENDIX PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
L7	1.1A	.2Ω	500uh	2090520-7					

CHOKE (AUDIO OUTPUT)

ITEM No.			REPLACEMENT DATA					NOTES
	IND.	RES.	BENDIX PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
L8	500uh	1.2Ω	2091234-1					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	BENDIX PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	4	1	2090815-2					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	BENDIX PART No.	QUAM PART No.	
SP1	6"	PM	6-8Ω	2091269-10 *	6A21Z8	* Used in Models OBV, OBT
	5"	PM	6-8Ω	2091269-11 ♦		♦ Used in Models OBG

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			BENDIX PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	SFE	2A 32V	AGA-2	2090932-6	301002 (SFE 2A 32V)	155004	AGA-2	HRF

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		BENDIX PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N295	2091243-1	1N295	1N295	Overload & AVC, Pigtail
M3	1N295	2091243-1	1N295	1N295	Detector, Pigtail

MISCELLANEOUS

ITEM No.	PART NAME	BENDIX PART No.	NOTES
M4	Tuner Assembly	2091235-2	Complete With Pushbuttons
M5	Spark Plate	220267-1	200mmf
	Printed Board	2091220-1	Includes Transistor X1, X2, X3 X4, X5

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Dial Glass	2091207-1	
Dial Pointer	2091228-1	
Knob	2091244-1	Tuning, Volume
Knob	2091209-1	Tone
Pushbutton	2091210-1	

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Shielded Hook-up Wire ..... Use BELDEN No. 8885

Bonding Strap ..... Use BELDEN No. 8661

PHOTOFACT® Folder

MAGNAVOX
CHASSIS 80-01-00, 80-02-00

MAGNAVOX
CHASSIS 80-01-00, 80-02-00

REPRESENTATIVE MODEL USING
CHASSIS 80-02-00

MAGNAVOX
CHASSIS 80-01-00, 80-02-00

TRADE NAME	Magnavox Chassis 80-01-00, 80-02-00
MANUFACTURER	The Magnavox Co., 2131 Bueter Road, Fort Wayne 4, Indiana
TYPE SET	AC Operated 3 Tube Stereo Phono Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	110 – 120 Volts AC, 60 Cycles RATING 32 Watts, .38 Amp. @117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER – SEE SIMILAR COLLARO CONQUEST (REVISED) – PHOTOFACT SET 408 FOLDER 6 OR RECORD CHANGER MANUAL RC-11

SET 508 FOLDER 13

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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KT182

PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

TUBES

ITEM No.	USE	TYPE
V1	Channel 1 AF Amp. - Channel 2 AF Amp.	12AX7 (7025) *

ITEM No.	USE	TYPE
V2	Channel 1 Output	50EH5
V3	Channel 2 Output	50EH5

* Alternate type used in Chassis 80-01-00

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA MAGNAVOX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■120	150	270023-32					TVLS-2440,8*	
B	▲80	150						TVA-1422	
C	20	150							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C3	33	Note 1	1468-000033	D6-330	5W5Q33	CM-19B-330M	GP433	1FM-433
C4	1000	Note 1	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C5	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C6	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C7	.047 100V	(2000) †	P288N-047	DD-503	CUB2S47	1DP-2-473	GEM-4147	2TM-S47
C8	33	Note 1	1468-000033	D6-330	5W5Q33	CM-19B-330M	GP433	1FM-433
C9	1000	Note 1	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C10	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C11	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C12	.047 100V	(2000) †	P288N-047	DD-503	CUB2S47	1DP-2-473	GEM-4147	2TM-S47
C13	.047 600V	Note 1	P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C14	10000 1400V		DAC-27	DD16-103	HVE16S1	16DP-3-103	UAC-110	BL-S10

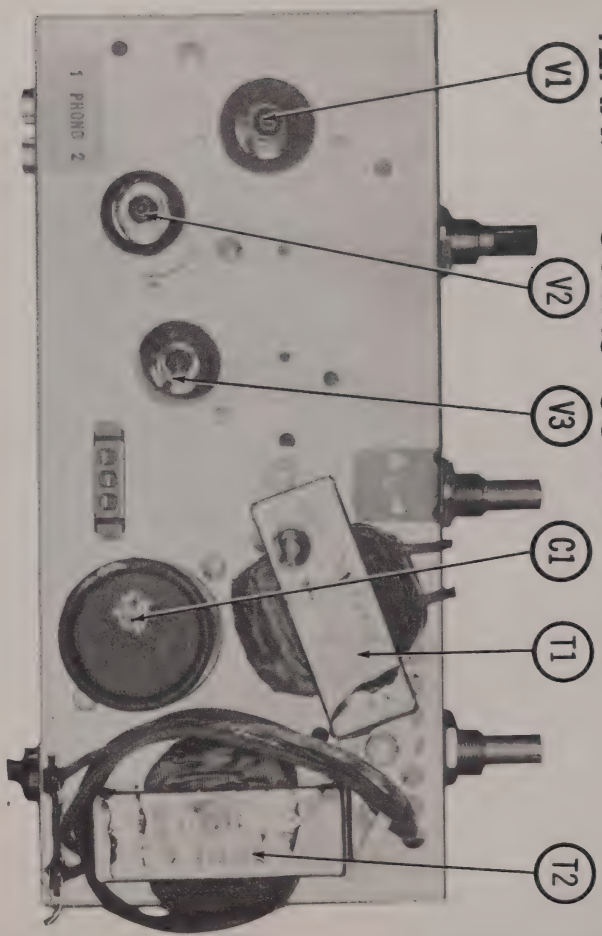
Note 1. Not used in Chassis 80-01-00.
† Alternate Value.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA MAGNAVOX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	3.3meg	½	220151-14①					Loudness, Channel 2
	1.6meg Tap							
B	3.3meg	½						Loudness, Channel 1
	1.6meg Tap							
R2A	1meg	½	220072-41	B-69	A47-1meg-S	Q11-137	U53	Balance
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R3A	1meg	½	220151-15	B-70	AD47-1meg-Z		FA16A	Tone, Channel 2
B	1meg	½		SR-70	Not Req.		RU16A	Tone, Channel 1
C	Shaft			Not Req.	FS-3		CS3500	

Note 1. Chassis 80-01-00 uses part #220151-20 (Less taps).

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R4	220K	Note 1
R5	470K	
R6	470Ω	
R7	68K	
R8	6800Ω	(220K) *
R9	47K	
R10	1500Ω	Note 1

ITEM No.	RATING	REMARKS
R11	68Ω	
R12	220K	Note 1
R13	470K	
R14	470Ω	
R15	68K	
R16	6800Ω	(220K) *
R17	47K	

ITEM No.	RATING	REMARKS
R18	1500Ω	Note 1
R19	68Ω	
R20	6800Ω	(10000Ω) *
R21	22Ω 2W	IRC#FR-22Ω
R22	33Ω 1W	

Note 1. Not used in Chassis 80-01-00.
* Used in Chassis 80-01-00.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC. 1	REPLACEMENT DATA MAGNAVOX PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	5200Ω Tap ⓐ 3%	70Ω	320288-3①					① Alternate Part #320288-2. Part #320084-1 used in Chassis 80-01-00.
		SEC. 2						
		3-4Ω						
		SEC. 1						
T2	5200Ω Tap ⓐ 3%	70Ω	320288-3①					
		SEC. 2						
		3-4Ω						

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA MAGNAVOX PART No.	QUAM PART No.	NOTES
SP1	8"	PM	3-4Ω	584090	8A21	
SP2	5 1/4"	PM	6-8Ω	584034-1	52A1	
SP3	8"	PM	3-4Ω	584090	8A21	
SP4	5 1/4"	PM	6-8Ω	584034-1	52A1	

RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA MAGNAVOX PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.070A	530051-1 *		1N1763 *	2F4 *	SR200 *	* Silicon Type

PHONO CARTRIDGE

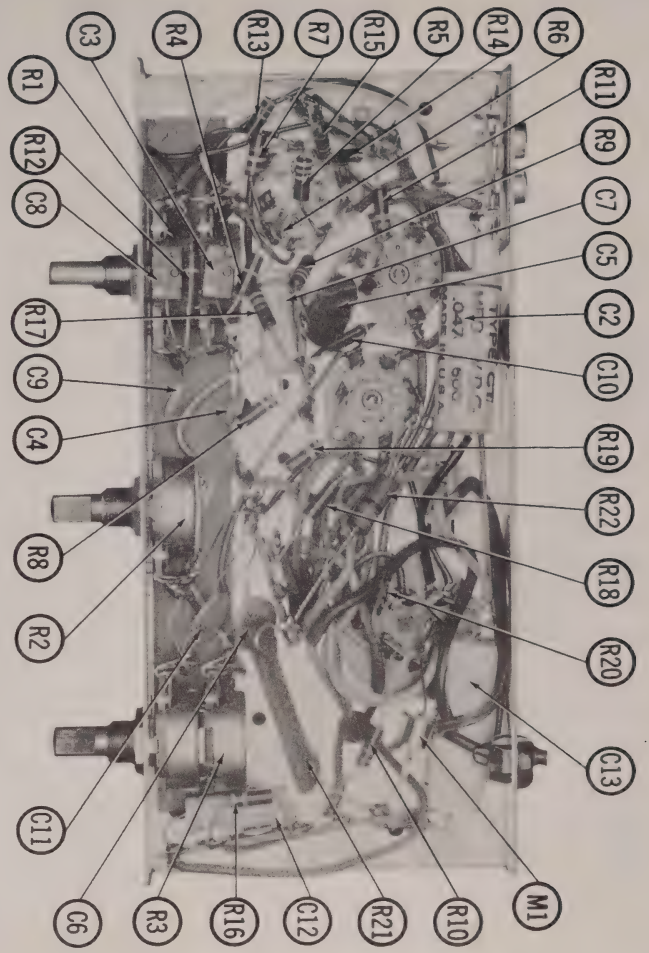
ITEM No.	REPLACEMENT DATA MAGNAVOX PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE
M2		13TB		26S	S1-1 S3-3	53	J43 & J-47X	8TA4-S	N-8TA-S

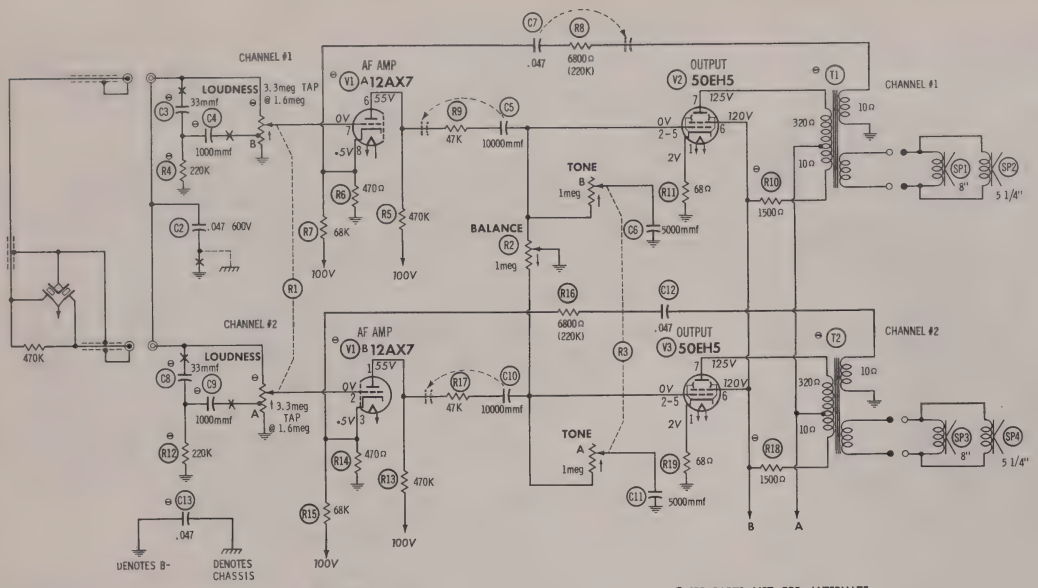
PHONO NEEDLE

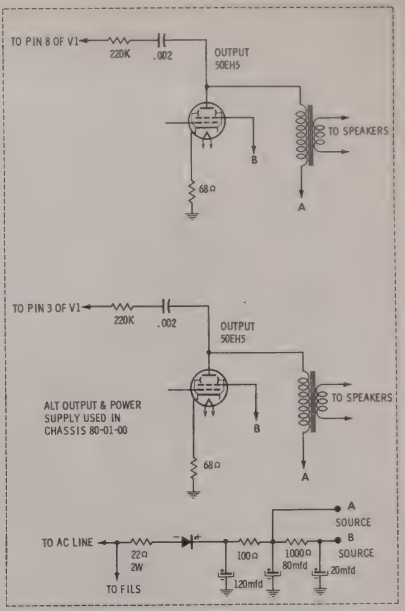
(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA MAGNAVOX PART No.	JENSEN PART No.	REMARKS
M3		E98 † or E98D ♦ and E98X † or E98XD ♦	† Jewel ♦ Diamond

CHASSIS—BOTTOM VIEW







RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†480K	0Ω	470Ω	15Ω	0Ω	†480K	0Ω	470Ω	NC
V2	50EH5	68Ω	500K	15Ω	75Ω	NC	†1500Ω	†320Ω		
V3	50EH5	68Ω	500K	75Ω	135Ω	NC	†1500Ω	†320Ω		

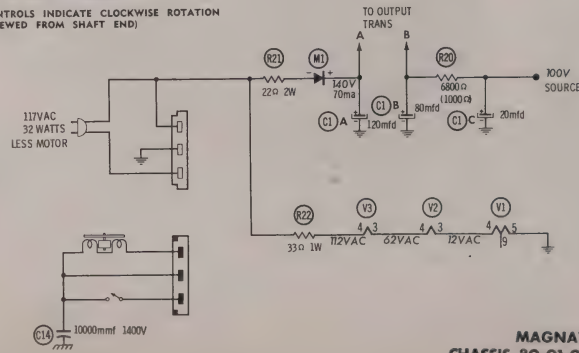
† MEASURED FROM OUTPUT OF M1. NC NO CONNECTION

❶ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.



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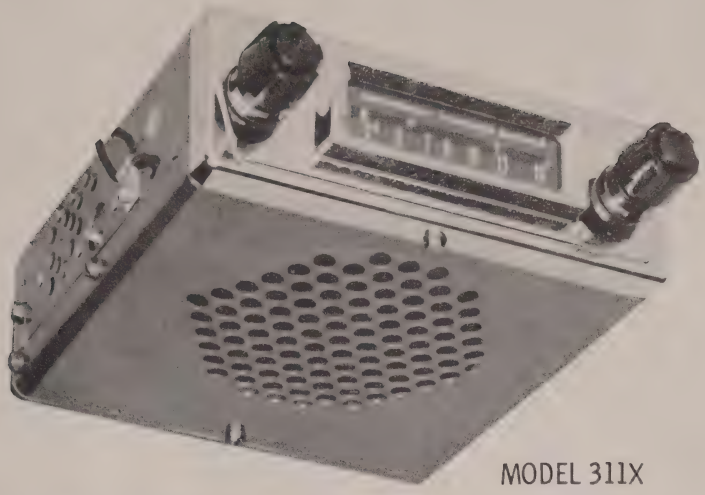
MAGNAVOX
CHASSIS 80-01-00, 80-02-00

PHOTOFACT® Folder

MOTOROLA
MODELS 310X, 311X



MODEL 311X

TRADE NAME	Motorola Models 310X (Negative Ground), 311X (Positive Ground)
MANUFACTURER	Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Illinois
TYPE SET	Battery Operated 3 Tube, 2 Transistor Universal Type Automobile AM Receiver
POWER SUPPLY	12 Volt Storage Battery
TUNING RANGE	BROADCAST 540 - 1610KC RATING 1.1 Amp. @ 12.6 Volts DC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2, A3, A4 ... GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
A5, A6 ..... GENERAL CEMENT #5000, 5003, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537
A8, A9, A10 ..... GENERAL CEMENT #9050-L, 9150
WALSCO #2521, 2524

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to antenna receptacle. Low side to chassis.	262.5KC (400% Mod.)	High end stop	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1610KC	"	"	A5, A6, A7	"
	Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. If necessary, back tuning cores (A8, A9 and A10) out of coils. Repeat Step 2.					
3.	Thru dummy to antenna receptacle.	1200KC	Tuner carriage 9/32" from high end stop.	Across voice coil	A8, A9, A10	Adjust for maximum output. Repeat steps 2 and 3.
4.	With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.					

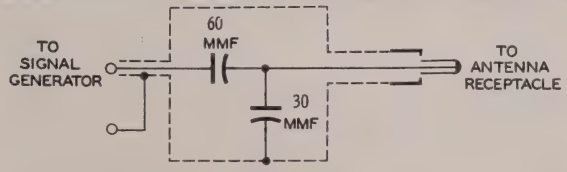


FIG. 1

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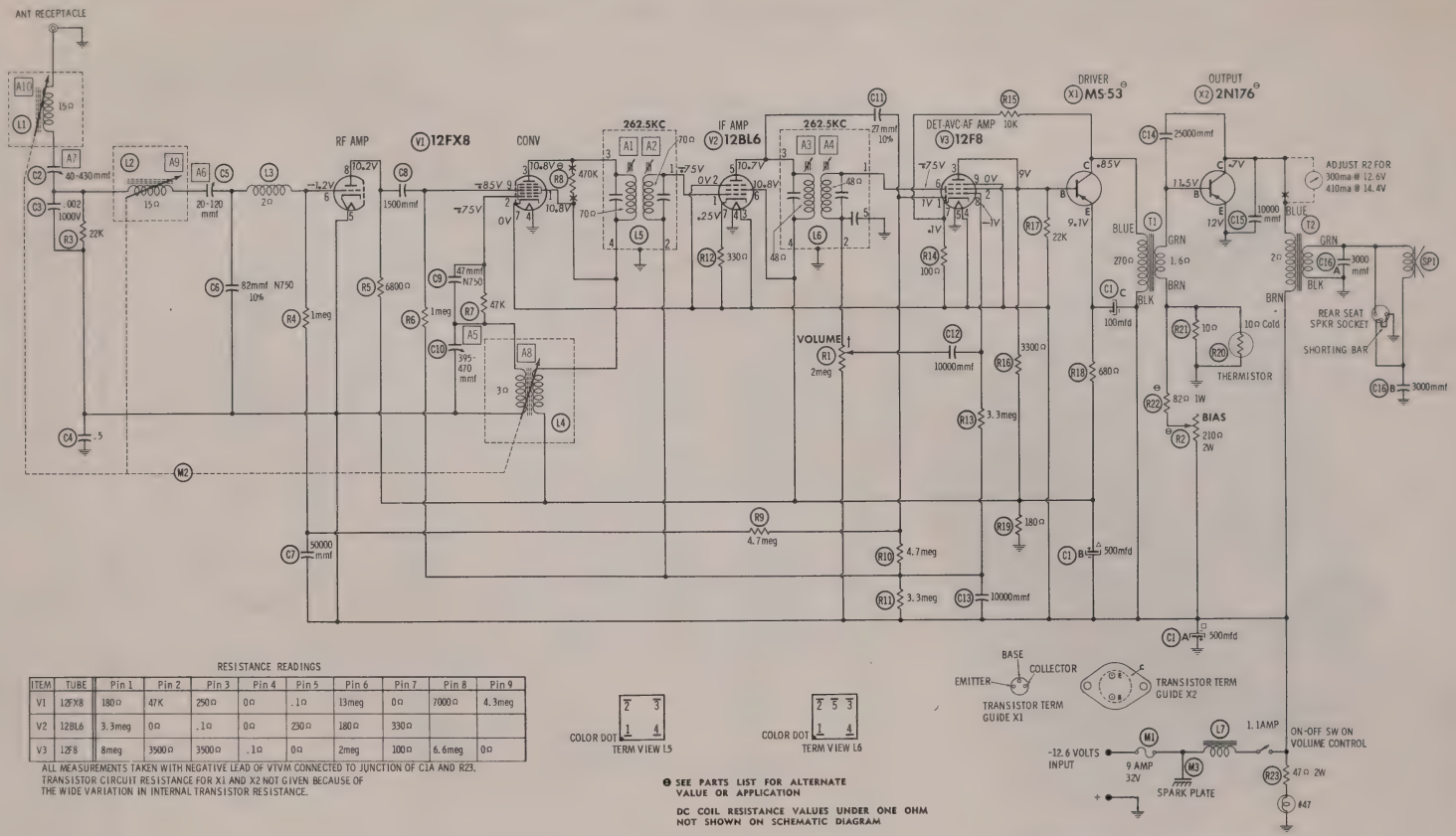
KD204

MOTOROLA
MODELS 310X, 311X
MOTOROLA
MODELS 310X, 311X
SET 508 FOLDER 14



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12FX8	180Ω	47K	250Ω	0Ω	.1Ω	13meg	0Ω	7000Ω	4.3meg
V2	12BL6	3.3meg	0Ω	.1Ω	0Ω	230Ω	180Ω	330Ω		
V3	12F8	8meg	3500Ω	3500Ω	.1Ω	0Ω	2meg	100Ω	6.6meg	0Ω

ALL MEASUREMENTS TAKEN WITH NEGATIVE LEAD OF VTVM CONNECTED TO JUNCTION OF C1A AND R23.
TRANSISTOR CIRCUIT RESISTANCE FOR X1 AND X2 NOT GIVEN BECAUSE OF
THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

❶ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections shown as bottom views.
3. Measured values are from socket pin to common negative
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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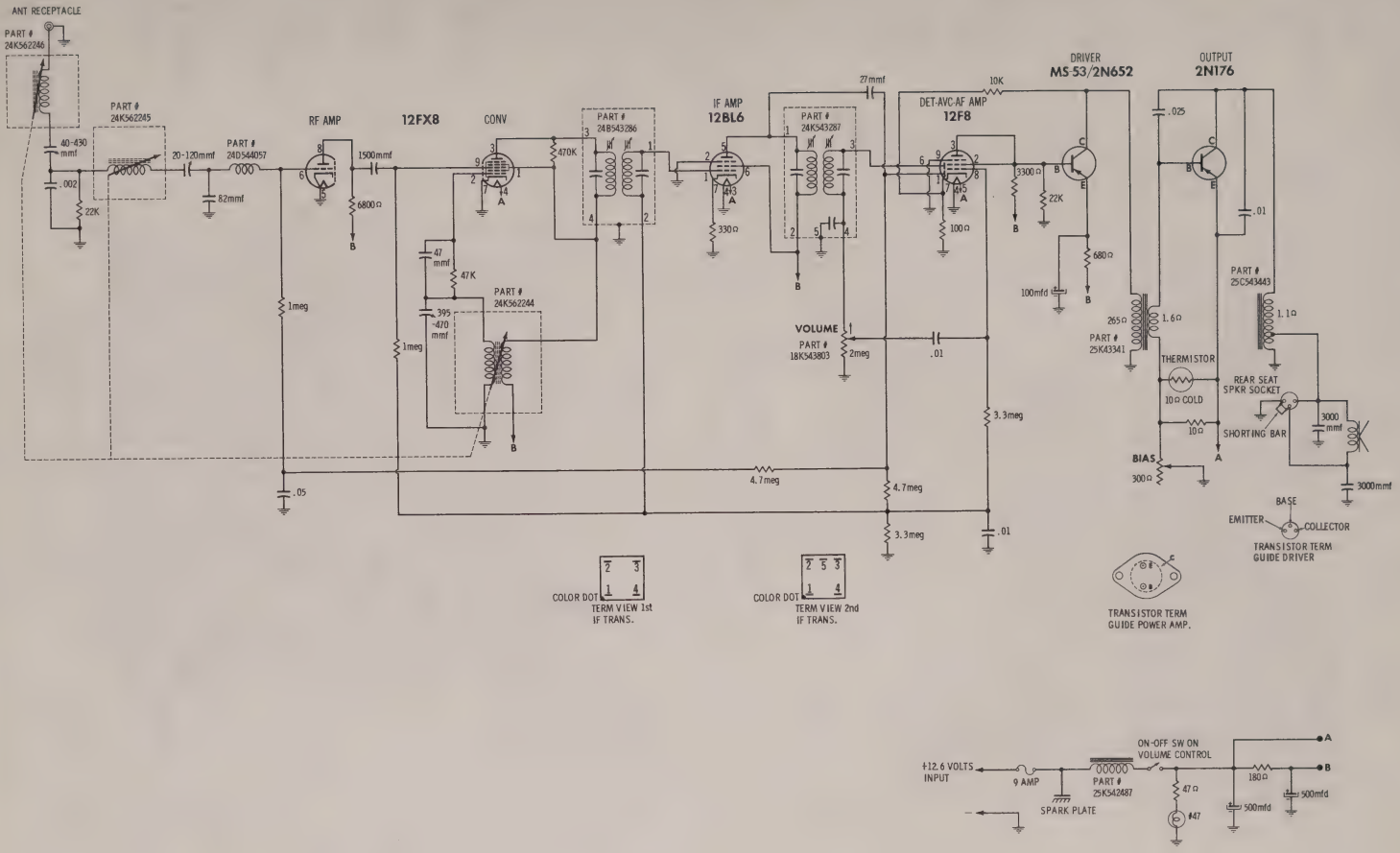
MOTOROLA
MODELS 311X



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MOTOROLA MODELS 310X

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •)
V1	RF Amp. - Converter	12FX8
V2	IF Amplifier	12BL6
V3	Det. - AVC - AF Amp.	12F8

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA: RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
X1	MN53 *	Driver	2N591	MN53	2N591	PNP
X2	2N176	Output			2N176	PNP Note 1

* Alternate Type 2N652.

Note 1. When replacing, apply DC-4 grease (Part #1M490487) or equivalent to both sides of insulator. Tighten mounting screws securely.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP.	RATING: VOLT.	REPLACEMENT DATA: MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■500	16	23B543279	AFH3-00-95		WP300.85		TVLS-3026.8 *	
B	▲500	16							
C	100	16							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	40-430	Pt. #20B544017						
C3	.002 1000V		P1088N-002	DD-202	CUB10D2	16DP-1-202	GEM-1022	10TM-D2
C4	.5 100V	Note 1	P288N-5		CUB2P5	1DP-2-503	GEM-205	2TM-P5
C5	20-120	Pt. #20K541014				424		
C6	82 N750 10%		N750-DI 82	DTN-82	C10Q82U	CCTN-820	CN7-482	10TCU-Q82
C7	50000		BPD-05	DD-503	H-05S5	1DP-2-503	GP150	5HK-S50
C8	1500		BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C9	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C10	395-470	Pt. #20A485708						
C11	27 10%		DI-27	DD-270	L10Q27	CCD-270	GP427	10TS-Q27
C12	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C13	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C14	25000				DPMS6S25	4DP-2-253	GEM-4125	4TM-S25

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C15	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C16A	3000		BPD-2X003	DD-302	BYA10D3	CCD-302	B-230	5HK-D30
B	3000			DD-302	BYA10D3	CCD-302	B-230	5HK-D30

Note 1. Used in Model 311X only.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2meg	½	18K543803	AB-76				Volume
B	Shaft			AK-8				
C	Bushing			AK-31				
D	Switch			KR-4				Power Off-On
R2	210Ω	2(WW)	18K544022					Bias Note 1

Note 1. Model 310X uses 300Ω bias (Part #18K544045).

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	22K	
R4	1meg	
R5	6800Ω	
R6	1meg	
R7	47K	
R8	470K	Note 1
R9	4.7meg	

Note 1. Not used in some versions.

ITEM No.	RATING	REMARKS
R10	4.7meg	
R11	3.3meg	
R12	330Ω	
R13	3.3meg	
R14	100Ω	
R15	10K	
R16	3300Ω	

ITEM No.	RATING	REMARKS
R17	2ZK	
R18	680Ω	
R19	180Ω	
R20	10Ω (Cold)	Pt. #6K543800
R21	10Ω	
R22	82Ω 1W	Note 2
R23	47Ω 2W	

Note 2. Used in Model 311X only.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	Ant. Coil	24K562246				
L2	RF Coil	24K562245				
L3	RF Choke	24D544057	TV-180	4515	RTC-8503	27uh
L4	Osc. Coil	24K562244				
L5	Input IF Trans.	24B543286	BC-350	12-H1	RTC-8638	
L6	Output IF Trans.	24K543287	BC-354	12-H6	RTC-8640	

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~)	MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
L7	1.1A	.6Ω	.001 Hy.	25K542487					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	20	1	25K543341					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	22Ω	3-4Ω	25C543445 ①					① Model 310X uses Part #25C543443.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	QUAM PART No.	
SP1	5"	PM	3-4Ω	50C543476	5A15	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			MOTOROLA PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	SFE	9A 32V	65R162248	1V541705	307009 (SFE 9V 32V)	155009	SFE9	HRH

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M2	Tuner	77K564224	Assembly Complete (MT-314)
M3	Spark Plate	64K530177	

CABINETS & CABINET PARTS

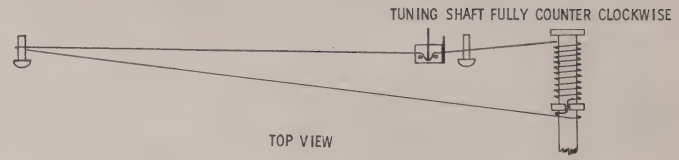
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

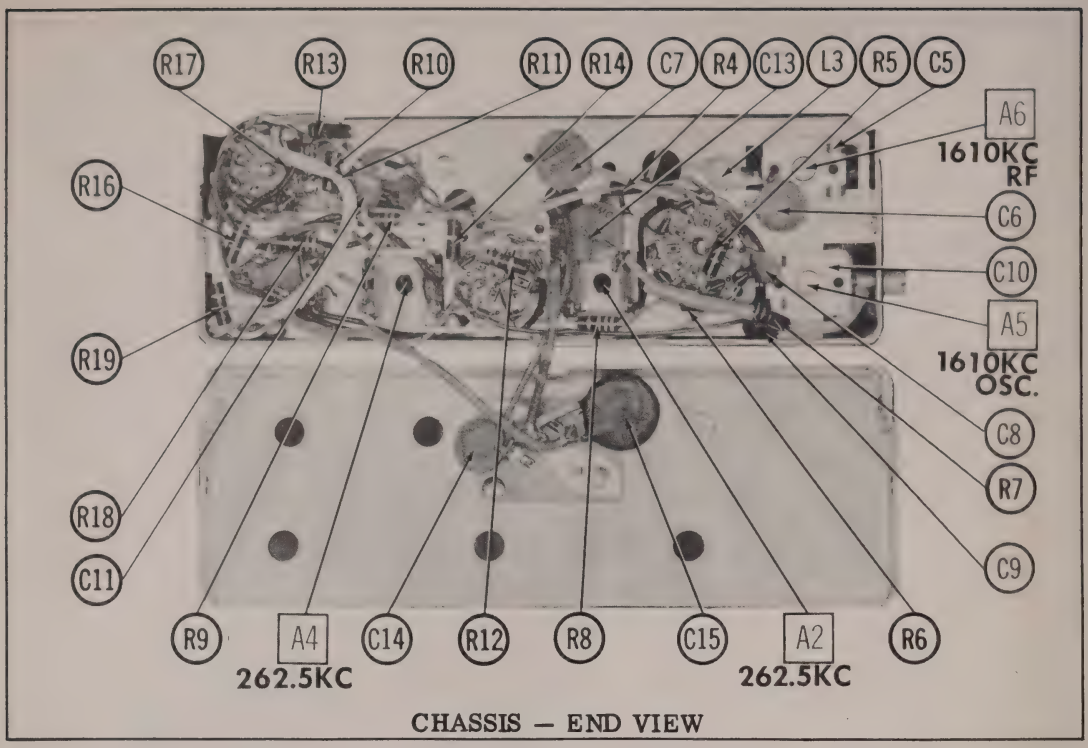
NAME	PART NO.	DESCRIPTION
Dial	1V543435	Background Assembly, Including Rivets
Dial	34B543390	Scale, Regular
Dial	34B544058	Scale, Inverted
Pointer	1K543277	Dial
Knob	36B543382	Tuning, Volume
Cover	15C543237	Bottom

WIRING DATA

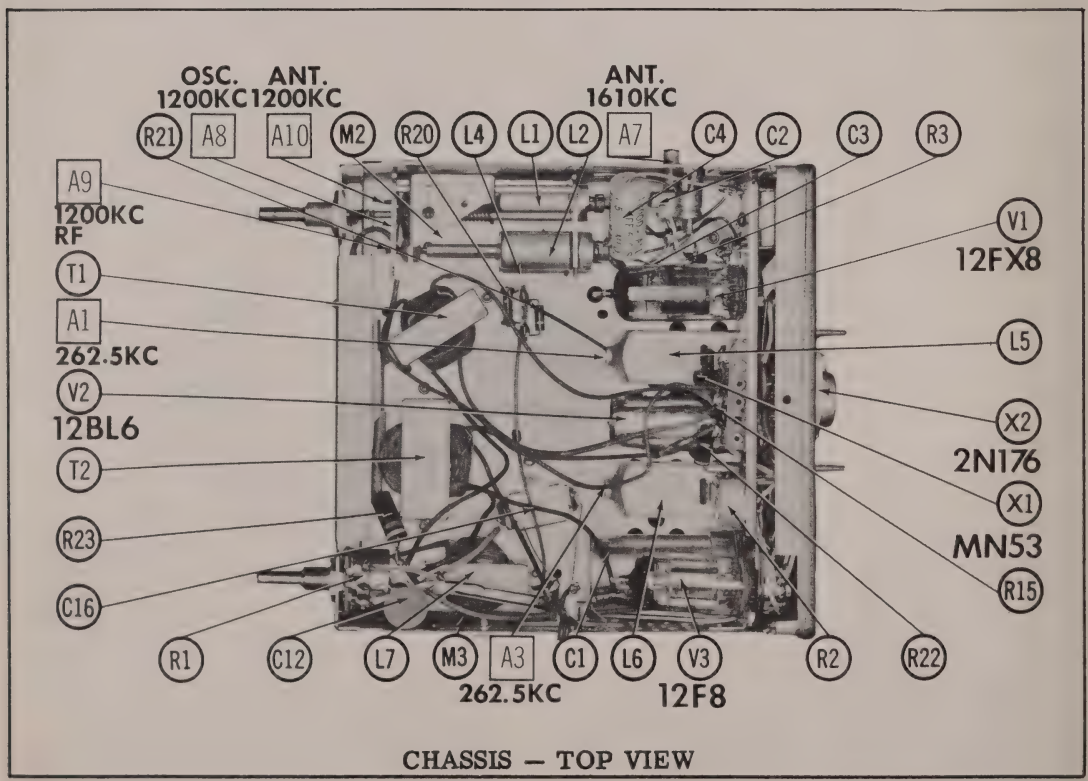
General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Shielded Hook-up Wire ..... Use BELDEN No. 8885
Bonding Strap ..... Use BELDEN No. 8661

DIAL CORD STRINGING





CHASSIS — END VIEW



CHASSIS — TOP VIEW

PHOTOFACT® Folder

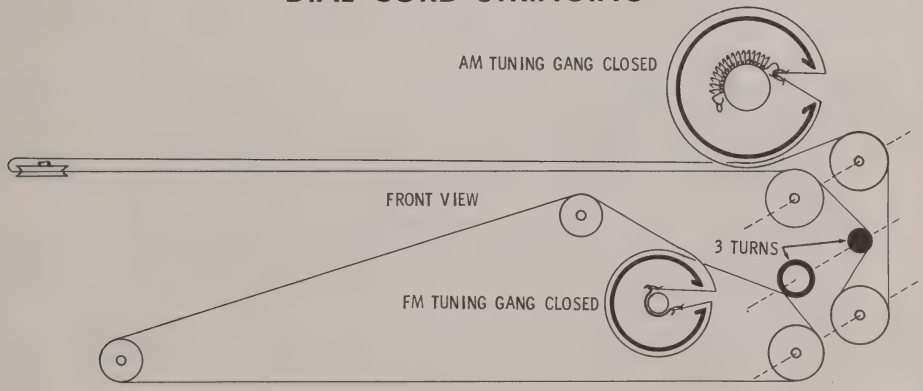
NORELCO MODELS B3X88U/70, B3X88U/71, B3X88U/72

NORELCO MODELS B3X88U/70, B3X88U/71, B3X88U/72

MODEL B3X88U 71

TRADE NAME	Norelco Models B3X88U/70, B3X88U/71, B3X88U/72		
SUPPLIER	North American Philips Co., Inc., 230 Duffy Ave., Hicksville, N. Y.		
TYPE SET	AC-DC Operated 7 Tube FM-BC-SW Receiver		
POWER SUPPLY	110/127/220 Volts AC-DC	RATING	31 Watts, .3 Amp. @ 117 Volts AC (On 110V Tap)
TUNING RANGES	BROADCAST 517-1612KC FREQ. MOD. 88-108MC	SHORT WAVE 1 SHORT WAVE 2	8.8-18.1MC 3.1-7.5MC

DIAL CORD STRINGING



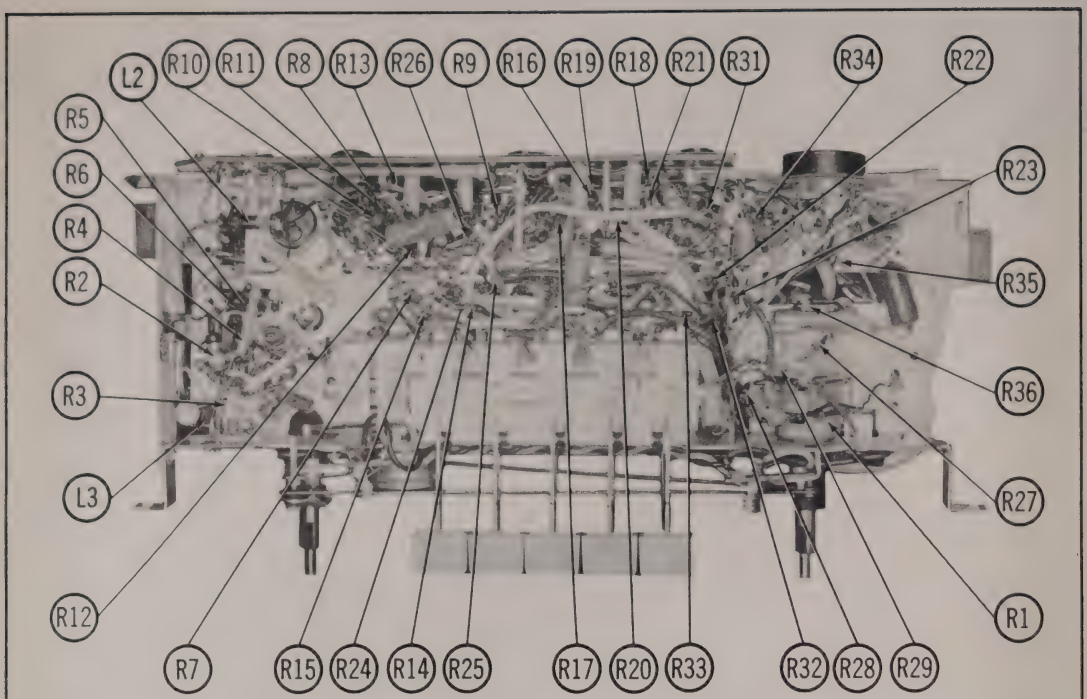
NORELCO MODELS B3X88U/70, B3X88U/71, B3X88U/72

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

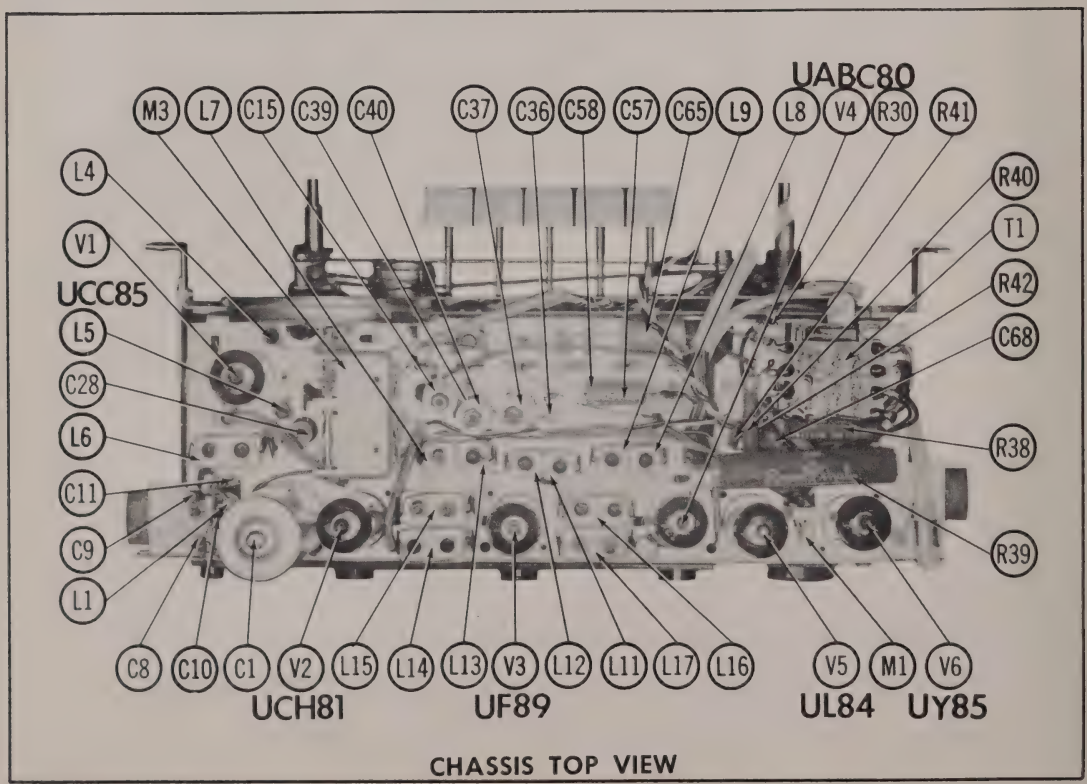
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

KK179

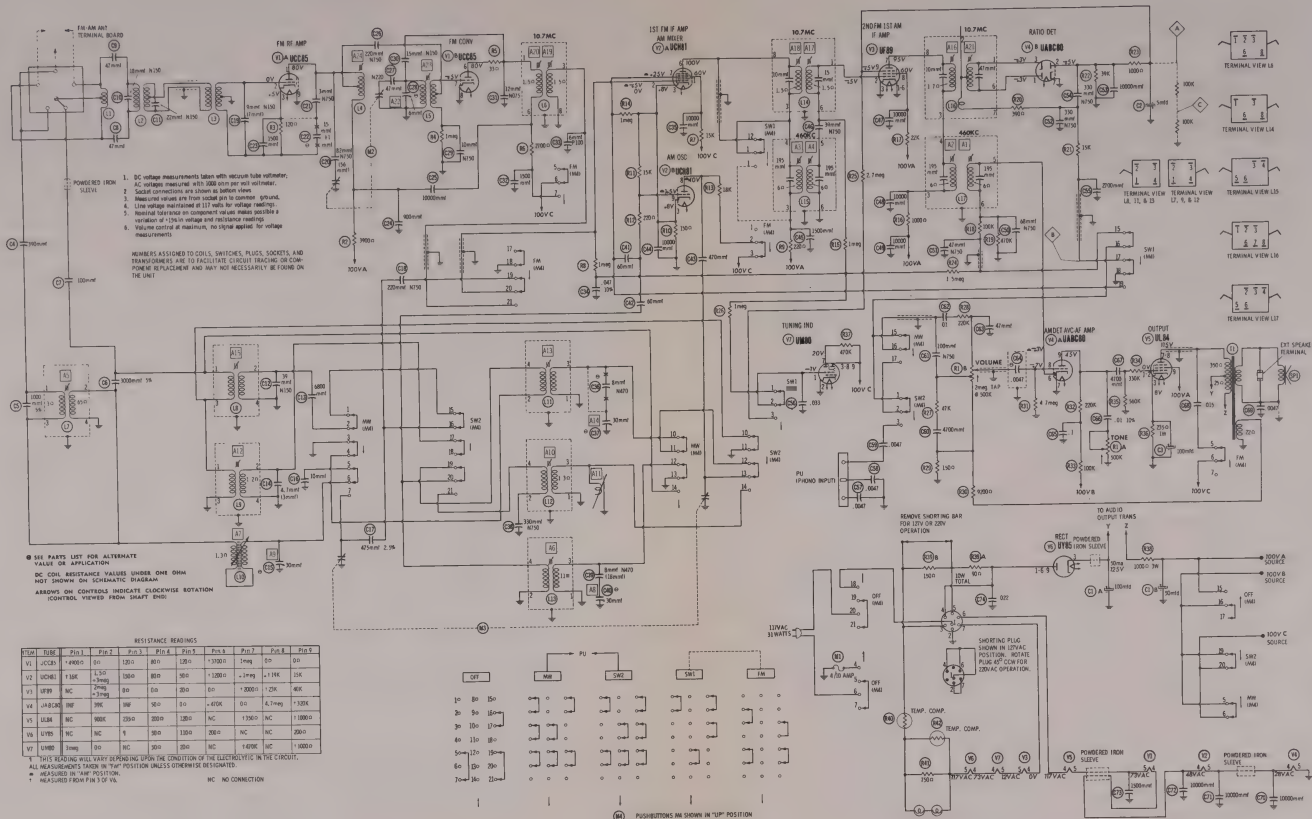
SET 508 FOLDER 15



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



CHASSIS TOP VIEW


FM-AM ANT TERMINAL BOARD
FM RF AMP
FM CONV
10.7MC
1ST FM IF AMP AM MIXER
AM OSC
2ND FM 1ST AM IF AMP
RATIO DET
AM DET AVC AF AMP
OUTPUT
TUNING IND
VOLUME
TONE
PU (PHONO INPUT)
EXT SPEAKER TERMINAL
TERMINAL VIEW L3
TERMINAL VIEW L4
TERMINAL VIEW L5
TERMINAL VIEW L6
TERMINAL VIEW L7
TERMINAL VIEW L7, 9, & 12
TERMINAL VIEW L8, 11, & 13
POWDERED IRON SLEEVE
1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT
● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)
REMOVE SHORTING BAR FOR 12V OR 28V OPERATION
SHORTING PLUG SHOWN IN 117VAC POSITION. ROTATE PLUG 45° CCW FOR 230VAC OPERATION.
TO AUDIO OUTPUT TRANS
RECT. POWDERED IRON SLEEVE
TEMP. COMP.
OFF MAN SW2 SW1 FM
PU
PUSHBUTTONS AM SHOWN IN "UP" POSITION PRESS "MAN" & "SW2" FOR PHONO OPERATION
111VAC 31 WATTS
1/10 AMP.
100V A SOURCE
100V B SOURCE
100V C SOURCE

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6CC65	4400Ω	0Ω	120Ω	80Ω	120Ω	1100Ω	1meg	0Ω	0Ω
V2	6CH6	1 MEG	1.5Ω +3meg	130Ω	80Ω	50Ω	1200Ω	1meg	1 MEG	15K
V3	6F89	NC	2meg +3meg	0Ω	0Ω	20Ω	0Ω	1000Ω	25K	40K
V4	6AB8/ECL82	INF	39K	1MF	50Ω	3Ω	410K	0Ω	4.7meg	1100K
V5	UL84	NC	900K	230Ω	200Ω	120Ω	NC	1150Ω	NC	1000Ω
V6	UY85	NC	NC	9	50Ω	110Ω	200Ω	NC	NC	250Ω
V7	UM80	3meg	0Ω	NC	50Ω	20Ω	NC	1400Ω	NC	1600Ω

† THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT. ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
* MEASURED IN "AM" POSITION.
† MEASURED FROM PIN 3 OF V6.
NC NO CONNECTION

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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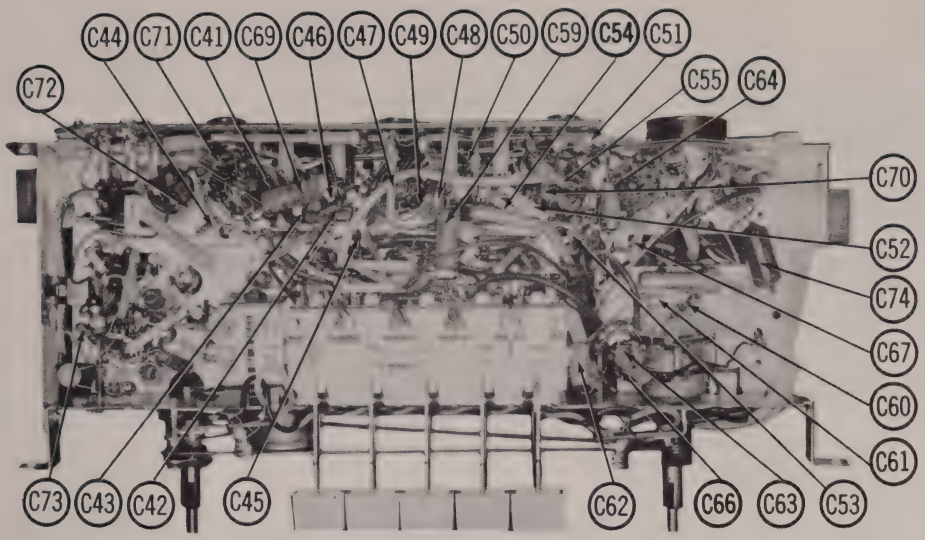
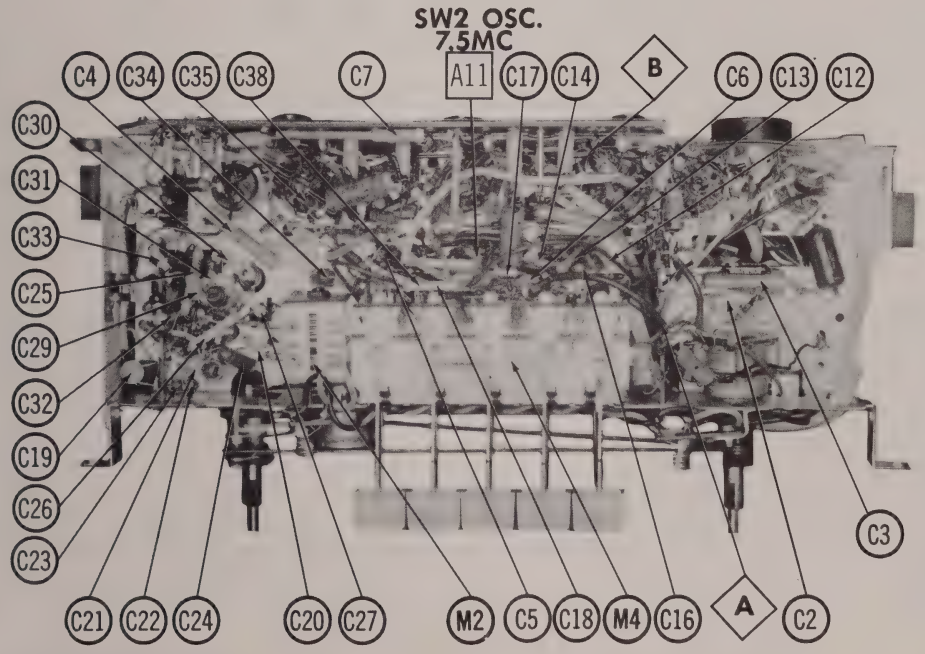
NORELCO MODELS B3X88U/70, B3X88U/71, B3X88U/72



CHASSIS BOTTOM VIEW – CAPACITOR IDENT.



CHASSIS BOTTOM VIEW – ALIGNMENT, CAPACITOR & MISC. IDENT.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:
- A1 thru A5 ..... GENERAL CEMENT #8721, 8722; WALSCO #2519
- A6, A10, A12, A13, A15 thru A21 .. GENERAL CEMENT #8282, 8606, 8606-L, 9091; WALSCO #2526, 2541, 2542, 2543, 2544
- A22, A23 ..... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989; WALSCO #2515, 2531, 2532

AM ALIGNMENT - SELECTOR AS INDICATED IN "RADIO DIAL SETTING" COLUMN

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .01mfd to pin 2 (grid) of AM Mixer. Low side to chassis.	460KC (400~ Mod.)	(MW) Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	"	"	580KC	"	A5	Adjust for MINIMUM output.
3.	Loop	550KC	550KC	"	A6, A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4.	"	1550KC	1550KC	"	A8, A9	"
5.	"	3MC	(SW2) 3MC	"	A10	"
6.	"	7.5MC	7.5MC	"	A11, A12	"
7.	"	8.5MC	(SW1) 8.5MC	"	A13	"
8.	"	18.0MC	18.0MC	"	A14, A15	Adjust for maximum output. Repeat steps 3 thru 8.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM - SELECTOR IN FM POSITION

Connect two matched 100K (±1%) resistors in series from point (A) to chassis. The junction of these two resistors is alignment point (C) as shown on the schematic.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9.	High side thru .01mfd to pin 2 (grid) of FM RF Amp. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference	DC probe to point (A). Common to chassis.	A16, A17, A18, A19, A20	Adjust for maximum output.
10.	"	"	"	DC probe to point (B). Common to point (C).	A21	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE - SELECTOR IN FM POSITION

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
9.	High side thru .01mfd to pin 2 (grid) of FM RF Amp. Low side to chassis.	10.7MC (450KC Swp.)	(FM) Point of non-interference	Vert. Amp. to point (A). Low side to chassis.	A16, A17, A18, A19, A20	Disconnect stabilizing capacitor C2. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C2.
10.	"	"	"	Vert. Amp. to point (B). Low side to chassis.	A21	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A16 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT - SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
11.	Across FM Antenna Terminals with 120Ω in each side.	106MC (Unmod.)	(FM) 106MC	DC probe to point (A). Common to chassis.	A22	Adjust for maximum deflection.
12.	"	89MC	89MC	"	A23, A24	"

FIG. 1

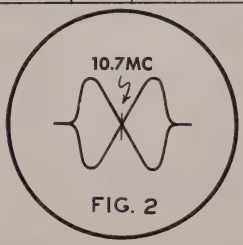


FIG. 2

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	• GENERAL ELECTRIC • RAYTHEON • SYLVANIA • USE	TYPE	ITEM No.	USE	TYPE
V1	FM RF Amp. - FM Conv.	UCC85			
V2	1st FM IF Amplifier - AM Mixer - AM Osc.	UCH81	V5	Output	UL84
			V6	Rectifier	UY85
V3	2nd FM - 1st AM IF Amp.	UF89	V7	Tuning Indicator	UM80
V4	Ratio Detector - AM Det. - AVC - AF Amp.	UABC80			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	NORELCO PART No.	REPLACEMENT DATA AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	100	250	NCH102P/50-100						
B	50	250		PRSH400	NLW5-100	TT150X5	TD-4-150	TE-1404	
C2	5	70	909/E5	XPP-3100	NLW10-3	TT63X100	MLI00-3	TE-1059.5	
C3	100	2.5							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	PYRAMID PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	390		5%		SI 390	D6-391	L10T39	CCD-391	B-339		10TS-T39
C5	1000		5%				5R5D1	CM-19B-102J	MCI255		MS-21
C6	3000		5%				5R5D3	CM-20B-302J	MCE461		MS-23
C7	100				SI 100	D6-101	L10T1	CCD-101	GP310		10TS-T10
C8	47				SI 47	D6-470	L10Q47	CCD-470	GP447		10TS-Q47
C9	47				SI 47	D6-470	L10Q47	CCD-470	GP447		10TS-Q47
C10	15	N150									10TCP-Q18
C11	33	N150									10TCP-Q33
C12	8200	N150			SI 6800	D6-682	BYAI0D68	CCD-682	B-268		10TCP-Q39
C14	4.7			(3) †	NPO-SI 4.7	TCZ-4R7	C10V47C	CNO-547			5HK-D68
C15	30			Note 1							10TCC-V47
C16	10		2.5%		SI 10	D6-100	L10Q1	CCD-100	GP410		10TS-Q10
C17	475							VCM-20-471G			
C18	220	N750			N750-SI 220	TCN-220	C10T22U	CCTN-221	CN7-322		10TCU-T22
C19	9	N150		(7) †							10TCP-Q10
C20	82	N750		(56) †	N750-SI 82	TCN-82	C10Q82U	CCTN-820	CN7-482		10TCU-Q82
C21	3	N750			N750-SI 3.3				CN7-533		10TCU-V33
C22	15		simmf	Note 2	NPO-SI 15	TCZ-15	C10Q15U	CCTO-150	CNO-415		10TCC-Q15
C23	1500				BPD-0015	D6-152	BYAI0D15	CCD-152	B-215		5HK-D15
C24	900				SI 910	DD-911	L10T91	CM-19B-911M			1FM-39
C25	10000				SI 10000	D6-103	BYAI03R	CCD-103	B-110		5HK-S10
C26	220	N750			N750-SI 220	TCN-220		CCTN-221	CN7-322		10TCU-T22
C27	47	N220									10TCR-Q47
C28	6			Note 1							
C29	10	N750			N750-SI 10	TCN-10	C10Q1U	CCTN-100	CN7-410		10TCU-Q10
C30	15	N150									10TCP-Q15
C31	12	N075									
C32	1500				BPD-0015	D6-152	BYAI0D15	CCD-152	B-215		5HK-D15
C33	6	P100									
C34	.047	400V	10%		V84C4847-10%	DD-503	PM4847	4DP-3-473	GFM-1615	47M-947	
C35	10000				SI 10000	D6-103	BYAI03R	CCD-103	B-110	5HK-S10	
C36	8	N470		Note 2							
C37	30			Note 1							
C38	330	N750			N750-SI 330	TCN-330	C10T33U		CN7-333		10TCU-T33
C39	8	N470		(18) †							
C40	30			Note 1							
C41	60				NPO-SI 62	TCZ-62	C10Q62C	CM-19B-620M			1FM-462
C42	60				NPO-SI 62	TCZ-62	C10Q62C	CM-19B-620M			1FM-462
C43	470				SI 470	D6-471	BYAI0T47	CCD-471	B-347		10TS-T47
C44	10000				SI 10000	D6-103	BYAI03R	CCD-103	B-110		5HK-S10
C45	1500				BPD-0015	D6-152	BYAI0D15	CCD-152	B-215		5HK-D15
C46	39	N750			N750-SI 39	TCN-390	C10Q39U	CCTN-390	CN7-439		10TCU-Q39
C47	10000				SI 10000	D6-103	BYAI03R	CCD-103	B-110		5HK-S10
C48	10000				SI 10000	D6-103	BYAI03R	CCD-103	B-110		5HK-S10
C49	10000				SI 10000	D6-103	BYAI03R	CCD-103	B-110		5HK-S10
C50	68	N750			N750-SI 68	TCN-68	C10Q68U	CCTN-680	CN7-468		10TCU-Q68

CHASSIS—TOP VIEW

PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING		REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C51	47	N750		N750-SI 47	TCN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C52	330	N750		N750-SI 330	TCN-330	C10T33		CN7-333	10TCU-T33
C53	10000			SI 10000	D6-103	BYA10SI	CCD-103	B-110	5HK-S10
C54	330	N750		N750-SI 330	TCN-330	C10T33U		CN7-333	10TCU-T33
C55	2700			SI 2700	D6-272	BYA10D27	CCD-272	B-227	10TS-D27
C56	.033	250V		P488N-033	DD-303	CUB6S33	6DP-3-333	GEM-4133	6TM-S33
C57	.0047	400V		P488N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C58	.0047	400V		P488N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C59	.0047	400V		P488N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C60	4700			SI 4700	D6-472	BYA10D47M	CCD-472	B-247	5HK-D47
C61	100	N750		N750-SI 100	TCN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C62	.01	250V		P488N-01	D6-103	CUB4SI	4DP-1-103	GEM-411	4TM-S10
C63	47			SI 47	D6-470	L10Q47	CCD-470	GP447	10TS-Q47
C64	.0047	500V	Note 3						
C65	.1	250V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C66	.01	125V 10%		V84C4SI-10%		PM4SI	4DP-1-103	GEM-1611	4TM-S10
C67	4700			SI 4700	D6-472	BYA10D47M	CCD-472	B-247	5HK-D47
C68	.015	500V		P688N-015	DD-153	CUB6SI5	6DP-2-153	GEM-4115	6TM-SI5
C69	.0047	400V		P488N-0047	D6-103	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C70	10000			SI 10000	D6-103	BYA10SI	CCD-103	B-110	5HK-S10
C71	10000			SI 10000	D6-103	BYA10SI	CCD-103	B-110	5HK-S10
C72	10000			SI 10000	D6-103	BYA10SI	CCD-103	B-110	5HK-S10
C73	1500			BPD-0015	D6-152	BYA10D15	CCD-152	B-215	5HK-D15
C74	.022	500V		P688N-022	DD-203	CUB6S22	6DP-2-223	GEM-6122	6TM-S22

† Alternate Value. Note 1. Nominal Value. Note 2. Not used in some versions. Note 3. Shielded Unit.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA NORELCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
	RESISTANCE	WATTS						
R1A B	500K 2meg 500K Tap	½	WE36437					Tone Volume

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	3900Ω	
R3	120Ω	
R4	1meg	
R5	33Ω	
R6	2700Ω	
R7	15K	
R8	1meg	
R9	220Ω	
R10	150Ω	
R11	15K	
R12	220Ω	
R13	18K	
R14	1meg	
R15	1meg	

ITEM No.	RATING	REMARKS
R16	1000Ω	
R17	22K	
R18	100K	
R19	470K	
R20	390Ω	
R21	15K	
R22	39K	
R23	1000Ω	
R24	1.5meg	
R25	2.7meg	
R26	1meg	
R27	47K	
R28	220K	
R29	150Ω	

ITEM No.	RATING	REMARKS
R30	9200Ω	
R31	4.7meg	
R32	220K	
R33	100K	
R34	330K	
R35	560K	
R36	235Ω 1W	
R37	470K	
R38	1000Ω 3W	IRC #PW3-1KΩ
R39A B	90Ω 10W 150Ω	Pt. #WE34650
R40	Temp. Comp.	Pt. #928/2K
R41	750Ω	
R42	Temp. Comp.	Pt. #WN50064

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA NORELCO PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	FM Ant. Coil	WE11061				
L2	FM Ant. Trans.	WE74103				
L3	FM Ant. Trans.	WE11231				
L4	FM RF Coil	WE11151				
L5	FM Osc. Coil	WE11177				
L6	1st FM IF Trans.	WE12120				
L7	MW Ant. Trans.	A312778				
L8	SW1 Ant. Trans.	921/17-26M				
L9	SW2 Ant. Trans.	WE12152				

COILS (RF-IF) (cont)

ITEM No.	USE	REPLACEMENT DATA NORELCO PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L10	Loopstick	WE35825	BC-419			
L11	SW1 Osc. Coil	WE12153				
L12	SW2 Osc. Coil	WE12151				
L13	MW Osc. Coil	A312777				
L14	2nd FM IF Trans.	926/107				
L15	1st AM IF Trans.	925/470-2				
L16	Ratio Detector	926/107RD-2				
L17	2nd AM IF Trans.	WE12116				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC. 1	IMPEDANCE SEC. 2	REPLACEMENT DATA NORELCO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	3800Ω Tap @ 7%	3-4Ω	20Ω	WE15164					

SPEAKER

ITEM No.	TYPE SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA NORELCO PART No.	QUAM PART No.	NOTES
SP1	4" x 6"	PM	3-4Ω	AD2460X	46A15	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA NORELCO PART No. FUSE	NORELCO PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1		4/10A 250V					GMA 4/10	

MISCELLANEOUS

ITEM No.	PART NAME	NORELCO PART No.	NOTES
M2	Tuning Cap.		FM, 2 Gang
M3	Tuning Cap.		AM, 2 Gang. Ant. 11-470mmf, Osc. 9-186mmf
M4	Switch		Function Selector (Pushbutton Type)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Dial	WE21969	Model B3X88U/70
Dial	WE21970	Model B3X88U/71
Dial	WE21971	Model B3X88U/72
Knob	WE36534	Large, Model B3X88U/70
Knob	WE36529	Small, Model B3X88U/70
Knob	WE36551	Large, Model B3X88U/71, B3X88U/72
Knob	WE36552	Small, Model B3X88U/71, B3X88U/72
Knob	WE22983	Line Voltage Selector
Cabinet	A377934	Creme, Model B3X88U/70
Cabinet	A378022	Green, Model B3X88U/71
Cabinet	A378042	Red, Model B3X88U/72
Pushbutton	HA71320	On-Off, MW, SW2, SW1, FM

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT® Folder

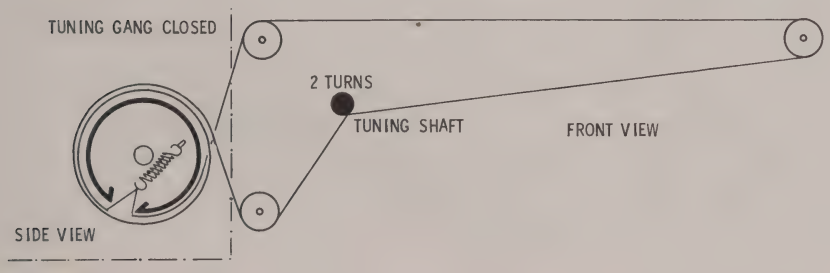
OLYMPIC CONTINENTAL
MODEL GBS388

OLYMPIC CONTINENTAL
MODEL GBS388

TRADE NAME	Olympic Continental Model GBS388
MANUFACTURER	Olympic, A Div. of the Siegler Corp., 34-01 38th Ave., Long Island City 1, N. Y.
TYPE SET	AC Operated 13 Tube FM-BC-SW Receiver With 4 Speed Automatic Stereo Record Changer
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 100 Watts, .86 Amp. @117 Volts AC (Radio) 85 Watts, .78 Amp. @117 Volts AC (Phono, Less Motor)
TUNING RANGES—BROADCAST	550-1600KC FREQ. MOD. 88-108MC SHORT WAVE 6-18MC

FOR SERVICE INFORMATION ON RECORD CHANGER PART #RX26202-2 — SEE MONARCH UA12 — PHOTOFACT SET 465 FOLDER 6

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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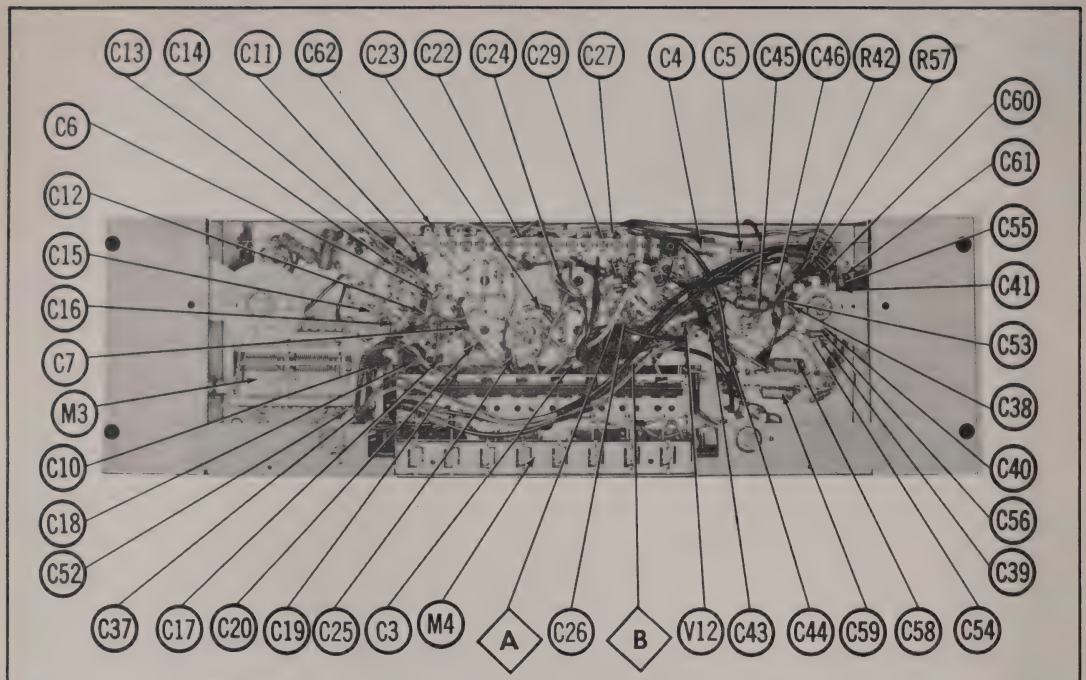
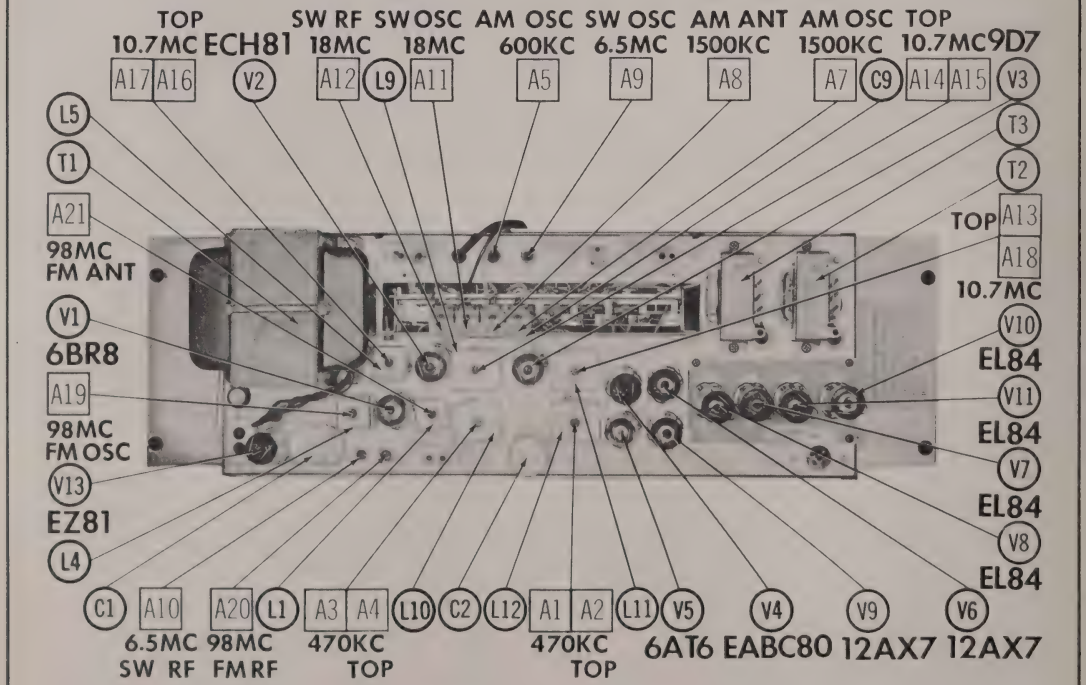
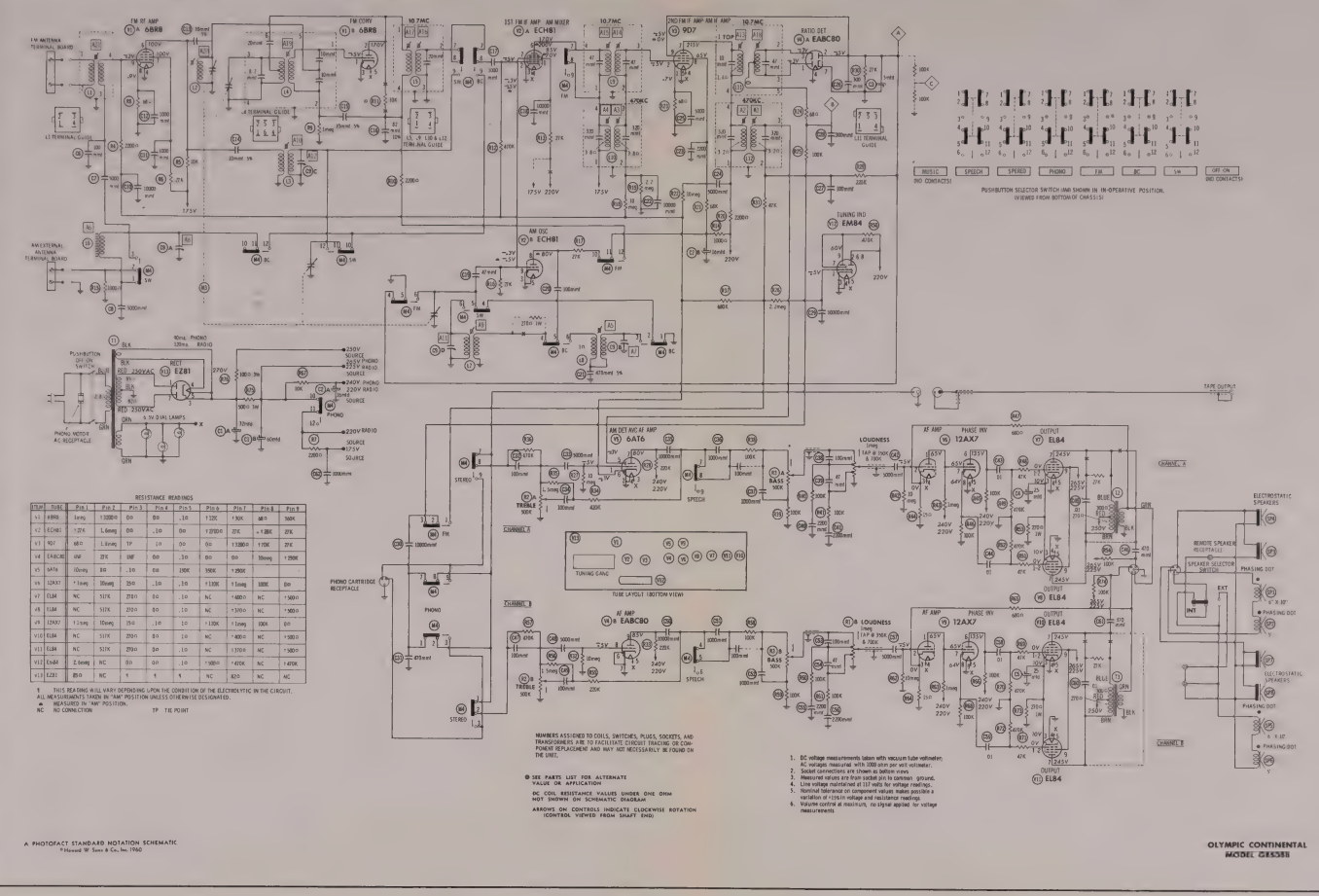


CHASSIS BOTTOM VIEW — CAPACITOR & MISC. IDENT.



CHASSIS — TOP VIEW



RESISTANCE READINGS

STEP	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BR8	1.6meg	1.1000Ω	0Ω	0Ω	.1Ω	1.12K	1.30Ω	∞Ω	160K
V2	ECH81	1.2K	1.6meg	0Ω	.1Ω	0Ω	1.2700Ω	22K	1.2BK	22K
V3	9D7	68Ω	1.6meg	1.2	.1Ω	0Ω	0Ω	1.2300Ω	1.17K	22K
V4	EABC80	4MF	22K	1MF	0Ω	.1Ω	0Ω	0Ω	10meg	1.250K
V5	6AT6	10meg	8Ω	.1Ω	0Ω	190K	190K	1.250K		
V6	12AX7	1.1meg	10meg	250	.1Ω	.1Ω	1.12K	1.1meg	100K	0Ω
V7	EL84	NC	517K	270Ω	0Ω	.1Ω	NC	1.400Ω	NC	1.150Ω
V8	EL84	NC	517K	270Ω	0Ω	.1Ω	NC	1.300Ω	NC	1.150Ω
V9	12AX7	1.1meg	10meg	250	.1Ω	.1Ω	1.12K	1.1meg	100K	0Ω
V10	EL84	NC	517K	270Ω	0Ω	.1Ω	NC	1.400Ω	NC	1.150Ω
V11	EL84	NC	517K	270Ω	0Ω	.1Ω	NC	1.370Ω	NC	1.150Ω
V12	EM84	2.6meg	NC	0Ω	0Ω	.1Ω	1.500Ω	1.470K	NC	1.470K
V13	EZ81	0Ω	NC	¶	¶	¶	NC	820	NC	NC

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT. ALL MEASUREMENTS TAKEN IN "AM" POSITION UNLESS OTHERWISE DESIGNATED.
⇔ MEASURED IN "AM" POSITION.
NC NO CONNECTION
TP TIE POINT

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter.
2. AC voltages measured with 1000 ohm per volt voltmeter.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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OLYMPIC CONTINENTAL
MODEL 6A5511

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:
A1 thru A5, A9, A10, A20. . GENERAL CEMENT #8607, 9291, 9294
WALSCO #2520, 2522, 2523, 2524, 2534, 2537
A7, A8, A11, A12..... GENERAL CEMENT #5000, 5003, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537
A13 thru A19, A21..... GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

AM ALIGNMENT—SELECTOR IN BC OR SW POSITION AS INDICATED

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 2 (grid) of AM Mixer. Low side to chassis.	470KC (400~ Mod.)	(BC) Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	Loop	600KC	(BC) 600KC	"	A5, A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Adjust A6 only if loopstick has been replaced or disturbed.
3.	"	1500KC	(BC) 1500KC	"	A7, A8	Adjust for maximum output.
4.	Across AM Antenna socket with 400Ω in series with high side.	6.5MC	(SW) 6.5MC	"	A9, A10	"
5.	"	18MC	(SW) 18MC	"	A11, A12	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM—SELECTOR IN FM POSITION

Connect two matched 100K (±1%) resistors in series from point Ⓐ to chassis. The junction of these two resistors is alignment point Ⓒ as shown on the schematic.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	Two turn loop around FM RF Amp. tube.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe to point Ⓐ. Common to chassis.	A13, A14, A15, A16, A17	Adjust for maximum deflection.
7.	"	"	"	DC probe to point Ⓑ. Common to point Ⓒ.	A18	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE—SELECTOR IN FM POSITION

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
6.	Two turn loop around FM RF Amp. tube.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. Amp. to point Ⓐ. Low side to chassis.	A13, A14, A15, A16, A17	Disconnect Stabilizing capacitor C3. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C3.
7.	"	"	"	Vert. Amp. to point Ⓒ. Low side to chassis.	A18	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A13 for maximum amplitude and straightness of cross-over lines.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	Across FM antenna socket with 300Ω in high side.	98MC (Unmod.)	(FM) 98MC	DC probe to point Ⓐ. Common to chassis.	A19, A20, A21	Adjust for maximum deflection.

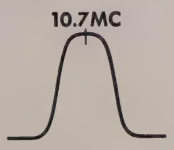


FIG. 1

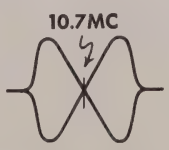
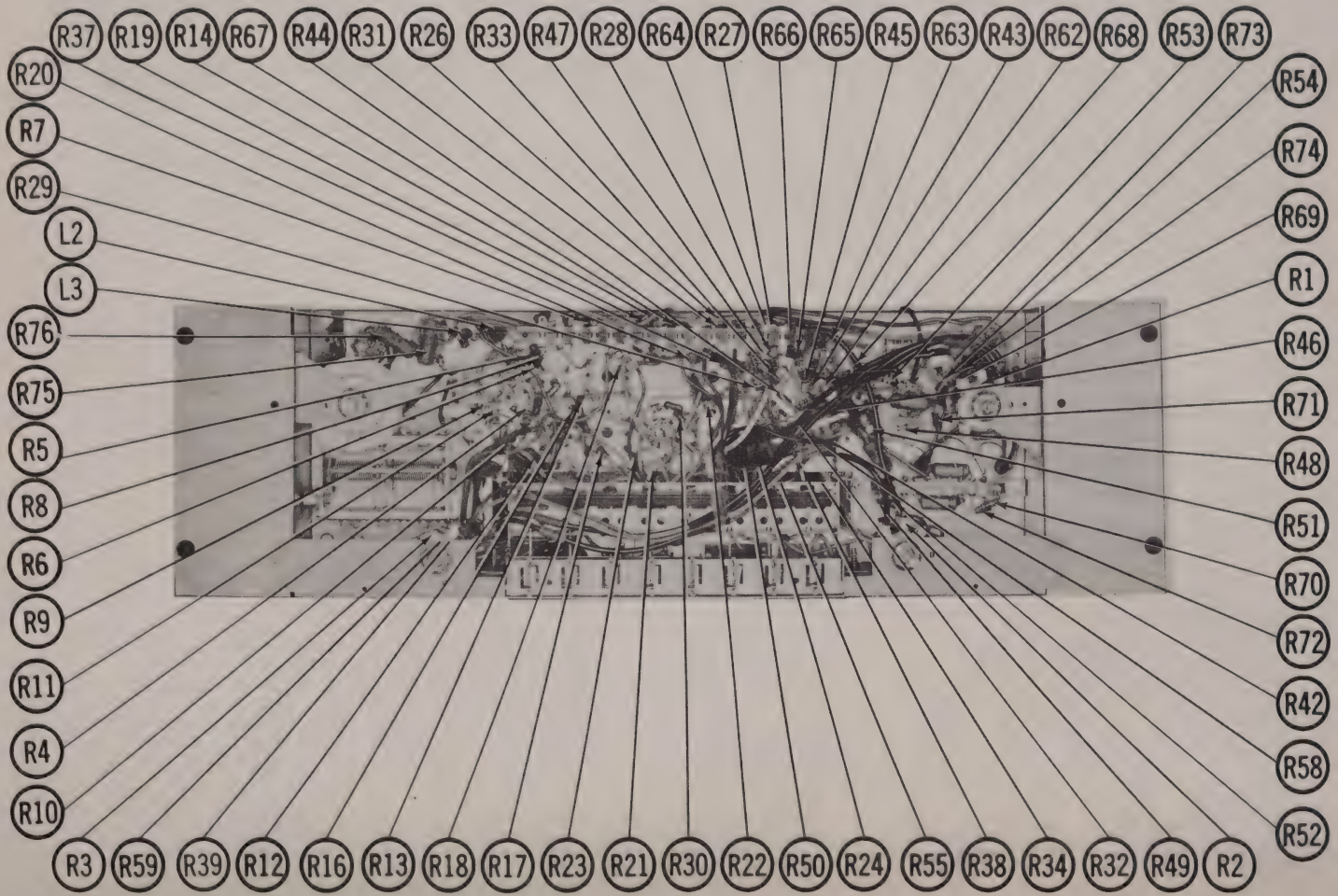


FIG. 2

OLYMPIC CONTINENTAL
MODEL GBS388

FOLDER 16



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	FM RF Amp.-FM Conv.	6BR8	V7	Channel A Output	EL84
V2	1st FM IF Amplifier-AM Mixer-AM Amp.	ECH81	V8	Channel A Output	EL84
V3	2nd FM-1st AM IF Amp.	9D7	V9	Channel B AF Amp.-Phase Inverter	12AX7
V4	Ratio Detector-Channel B AF Amp.	EABC80	V10	Channel B Output	EL84
V5	AM Det.-AVC-Channel A AF Amp.	6AT6	V11	Channel B Output	EL84
V6	Channel A AF Amp.-Phase Inverter	12AX7	V12	Tuning Indicator	EM84
			V13	Rectifier	EZ81

ELECTROLYTIC CAPACITORS

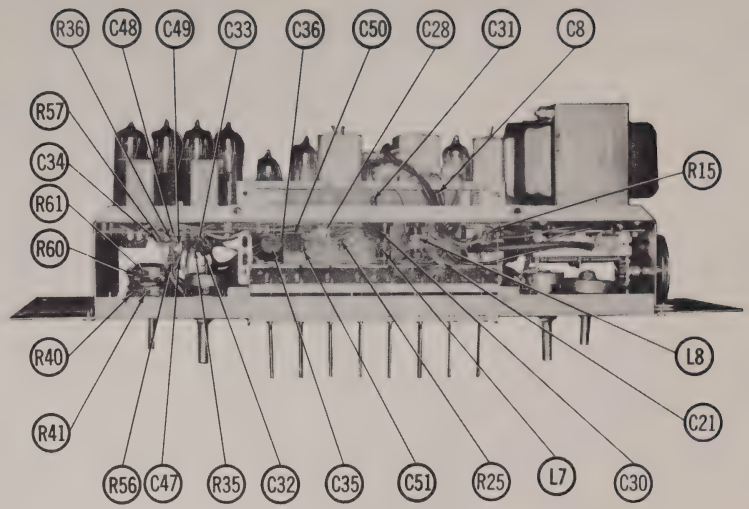
ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA OLYMPIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	32	300	COE30445	AFH1-39	XB0254	WP227, 35	TMS-1510	TVL-1624	
B	60	300		PRS1690			TD-60-350	TVA-1610	
C2A	16	275	COE30464	AFH2-32	B0290	FP225	TMD-2470	TVL-2625	
B	16	275							
C3	5	50	COE25270	SRE50V5	NLW5-50	TC30	ML5-50	TE-1303	
C4	25	25	COE30446	PRS1260	BBR25-25	TC26	TD-25-25	TVA-1205	
C5	25	25	COE30446	PRS1260	BBR25-25	TC26	TD-25-25	TVA-1205	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C7	5000		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C8	3000		SI 3000	D6-302	BYA10D3	CCD-302	GP230	10TS-D30
C9A								
B								
C								
D								
C10	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C11	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C12	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C13	10 5%		NPO-SI 10	TCZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C14	10 5%		NPO-SI 10	TCZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C15	10 5%		NPO-SI 10	TCZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C16	82 10%		NPO-SI 82	TCZ-82	C10Q82C	CCTO-820	CNO-482	10TCC-Q82
C17	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C18	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C19	47		SI 47	D6-470	L10Q47	CCD-470	GP447	10TS-Q47
C20	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C21	470 5%				5R5T47	CM-19B-471J	MCJ244	MS-347
C22	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C23	2200		SI 2200	D6-222	BYA10D22	CCD-222	B-222	5HK-D22
C24	5000		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C25	5000		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C26	300		SI 300	D6-301	L10T3	CCD-302	GP330	10TS-T30
C27	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C28	300		SI 300	D6-301	L10T3	CCD-301	GP330	10TS-T30
C29	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C30	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C31	470		SI 470	D6-471	BYA10T47	CCD-471	B-347	10TS-T47
C32	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C33	5000		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C34	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C35	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C36	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C37	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C38	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C39	47		SI 47	D6-470	L10Q47	CCD-470	GP447	10TS-Q47
C40	2200		SI 2200	D6-222	BYA10D22	CCD-222	B-222	5HK-D22

CHASSIS—SIDE VIEW



FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C41	2200		SI 2200	D6-222	BYA10D22	CCD-222	B-222	5HK-D22
C42	5000		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C43	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C44	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C45	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C46	470		SI 470	D6-471	BYA10T47	CCD-471	B-347	10TS-T47
C47	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C48	5000		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C49	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C50	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C51	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C52	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C53	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C54	47		SI 47	D6-470	L10Q47	CCD-470	GP447	10TS-Q47
C55	2200		SI 2200	D6-222	BYA10D22	CCD-222	B-222	5HK-D22
C56	2200		SI 2200	D6-222	BYA10D22	CCD-222	B-222	5HK-D22
C57	5000		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C58	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C59	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C60	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C61	470		SI 470	D6-471	BYA10T47	CCD-471	B-347	10TS-T47
C62	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA OLYMPIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg *		PTE30440					Loudness, Channel B
B	1meg *							Loudness, Channel A
R2A	500K		PTE30452	B-58	AD47-500K-Z		FA55A	Treble, Channel A
B	500K			SR-58	Not Req.		RU55A	Treble, Channel B
C	Shaft			Not Req.	RS-2		CS3500	
R3A	500K		PTE30452	B-58	AD47-500K-Z		FA55A	Bass, Channel B
B	500K			SR-58	Not Req.		RU55A	Bass, Channel A
C	Shaft			Not Req.	RS-2		CS3500	

* Taps @ 350K & 700K.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R4	2200Ω	
R5	10K	
R6	27K	
R7	2200Ω	
R8	68Ω	
R9	1meg	
R10	2200Ω	
R11	10K	Note 1
R12	470K	
R13	27K	
R14	1000Ω	
R15	1000Ω	
R16	27K	
R17	27K	
R18	10meg	
R19	2.2meg	
R20	2200Ω	
R21	68K	
R22	10meg	
R23	68Ω	
R24	68Ω	
R25	100K	
R26	2.2meg	
R27	10meg	
R28	220K	

ITEM No.	RATING	REMARKS
R29	220K	
R30	27K	
R31	47K	
R32	10meg	
R33	220K	
R34	220K	
R35	1.5meg	
R36	470K	
R37	680K	
R38	100K	
R39	100K	
R40	100K	
R41	100K	
R42	10meg	
R43	1meg	
R44	15Ω	
R45	100K	
R46	100K	
R47	680Ω	
R48	47K	
R49	470K	
R50	470K	
R51	47K	
R52	470K	
R53	270Ω 1W	

ITEM No.	RATING	REMARKS
R54	100K	
R55	220K	
R56	1.5meg	
R57	470K	
R58	100K	
R59	100K	
R60	100K	
R61	100K	
R62	10meg	
R63	1meg	
R64	15Ω	
R65	680Ω	
R66	100K	
R67	10K	
R68	100K	
R69	47K	
R70	470K	
R71	47K	
R72	470K	
R73	270Ω 1W	
R74	100K	
R75	500Ω 3W	IRC#PW5-500Ω
R76	100Ω 3W	IRC#PW5-100Ω

Note 1. Not used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA OLYMPIC PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	FM Ant. Trans.	TRE30453				
L2	FM RF Coil	CLE30052				
L3	SW RF Coil	CLE30454				
L4	FM Osc. Coil	CLE30417				
L5	1st FM IF Trans.	TRE25241				
L6	Loopstick	LPE30456	BC-419	705-A		
L7	SW Osc. Coil	CLE25251				
L8	BC Osc. Coil	CLE25255				
L9	2nd FM IF Trans.	TRE25237				
L10	1st AM IF Trans.	TRE30419				
L11	Ratio Det.	TRE25238				
L12	2nd AM IF Trans.	TRE25240				

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA OLYMPIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V @ .86A	500 VCT @ .120A	6.3V @ 5.5A	TRE30466					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA OLYMPIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	10.8K	6-8Ω	TRE30455	A-2901①	A-3823①	24S07①	S-53X①	① Drill New Mounting Hole.
T3	10.8K	6-8Ω	TRE30455	A-2901①	A-3823①	24S07①	S-53X①	

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA OLYMPIC PART No.	QUAM PART No.	NOTES
SP1	6"x 10"	PM	3-4Ω	SKE25266		
SP2	5"	PM	3-4Ω	SKE30477	5A15R	
SP3	Electrostatic			SKE30433		
SP4	Electrostatic			SKE30433		
SP5	6"x 10"	PM	3-4Ω	SKE25266		
SP6	5"	PM	3-4Ω	SKE30477	5A15R	
SP7	Electrostatic			SKE30433		
SP8	Electrostatic			SKE30433		

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA OLYMPIC PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE
M1		76-TS-TB		26S	S1-1 S3-3	49		8TA4-S	N-8TA-S

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA OLYMPIC PART No.	JENSEN PART No.	REMARKS
M2		CRA-55 † or CRA-55D ♦ and CRA-55X † or CRA-55XD ♦	† Jewel ♦ Diamond

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M3	Tuning Cap.	CVE30443	FM-AM (AM Sections: Ant. 10-550mmf, Osc. 12-470mmf)
M4	Switch	SWE30451	Function (Pushbutton Type)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Dial	DLE30450	Scale, Glass
Pointer	POE30439	Dial
Knob	KNE25249	Small Hole, Balance
Knob	KNE25250	Large Hole, Loudness
Knob	KNE30449	Bass, Treble
Knob	KNE25248	Tuning, Small
Knob	KNE30448	Tuning, Large

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

PHOTOFACT® Folder

RCA VICTOR
MODEL AP-1

RCA VICTOR
MODEL AP-1

RCA VICTOR
MODEL AP-1

GENERAL INFORMATION

The RCA AP-1 automobile record changer is a single speed mechanism designed to play, in automatic sequence, a stack of fourteen, 7-inch 45 rpm records. The changer is constructed with the record spindle pointing down. The records are loaded onto the spindle from underneath and held on it by the record spindle shelves.

Records are separated by the movement of the knives and shelves in the record spindle. The bottom record is separated from the stack when the knives move out of the spindle during the change cycle. The shelves then move into the spindle allowing the bottom record to drop into the bottom of the cabinet.

The tripping method used is the velocity type. In this method the trip lever spring causes the cycling cam to engage the rubber roller on the turntable shaft and start the mechanism into cycle.

This changer is designed to operate on 12 volts DC only.

Manufactured By:

Radio Corporation of America
RCA Victor Radio and "Victrola" Division
Camden, New Jersey

SET 508 FOLDER 17

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

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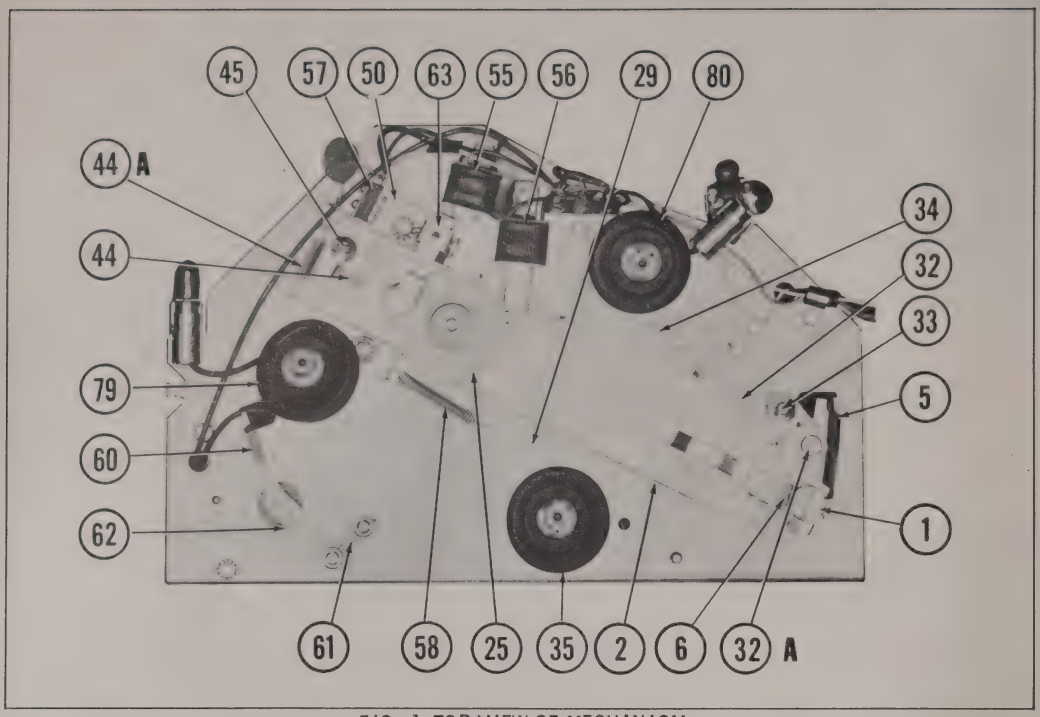


FIG. 1 TOP VIEW OF MECHANISM

OPERATING INSTRUCTIONS

Loading

1. The records are stacked with the last record to be played on top and the sides of the records to be played facing down.

2. The stack of records is inserted into the cabinet through the door opening and pushed up onto the record spindle. Push the records far enough up on the record spindle to allow the bottom record to rest on the record spindle shelves. The stabilizer disc and thrust spring will then hold the stack of records down against the shelves.

NOTE: If there are no records on the spindle, the insertion of a stack of records will push the pickup arm clear. If there is a record on the spindle, the pickup arm will have to be moved clear of the record before inserting more records.

Starting

To start the changer, push the On-Off switch to the On position. This will turn on the motor mechanism only. To start the changer mechanism into automatic play, push the Start-Reject switch to the Start position. Hold the switch in the Start position for a moment to prevent the first record from dropping off the spindle.

Rejecting

To reject a record at any time while the changer is operating, push the Start-Reject switch to the Reject position and release it. Pushing the switch to the Reject position causes the electromagnet to pull the armature on the cycling cam which starts the change cycle and drops the bottom record into the cabinet.

Repeating a Record

To repeat a record being played, move the Start-Reject switch to the Start position just as the record finishes playing. This will allow the record to repeat before being dropped from the spindle.

Stopping

To stop the changer after all of the records on the spindle have been played, move the On-Off switch to the Off position. The changer can be stopped at any time while a record is playing by pushing the On-Off switch to the Off position. The pickup arm should then be manually removed from the record to facilitate unloading or future reloading.

Unloading

Make sure the pickup arm is clear of the records. Turn the manual unload control knob 1/2 turn either

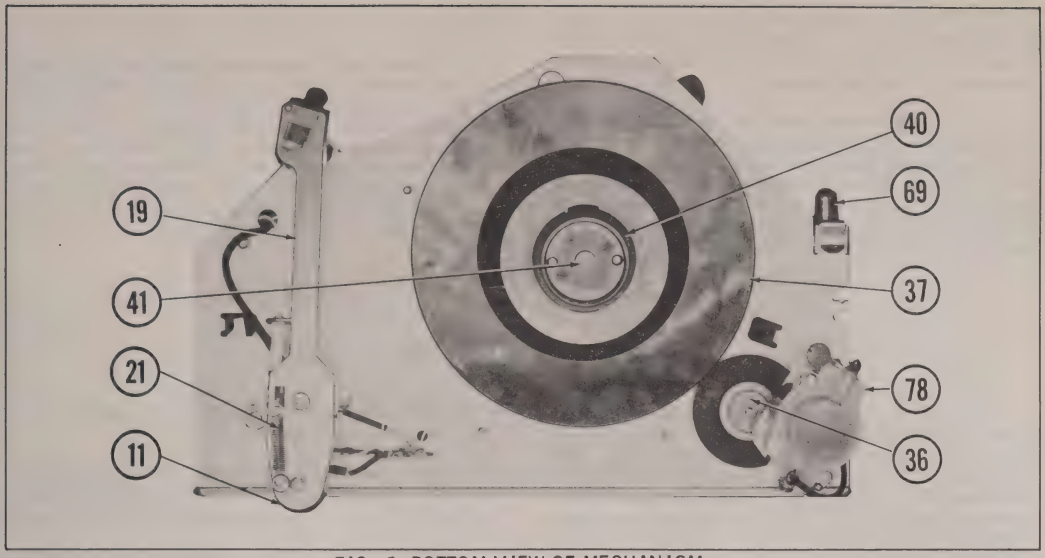


FIG. 2 BOTTOM VIEW OF MECHANISM

way. This will pull the spindle shelves into the spindle and allow the records to fall into the bottom of the cabinet.

CHANGE CYCLE

Observe the change cycle by manually rotating the turntable. The following action can then be readily observed, and the function of each part more easily understood.

To start the mechanism into automatic cycling move the pickup arm in next to the record spindle while rotating the turntable. The movement of the pickup arm (19) in next to the record spindle (40) causes the trip lever (32) to push the trip lever spring (34) against the tab on the cycling cam (29). The slight movement of the trip lever spring (34) against the cycling cam tab causes the cycling cam (29) to engage the rubber roller (46) on the turntable shaft. The cycling cam (29) is mounted on the cycling slide (2). As the rubber roller (46) moves the cycling cam (29) through its cycle, the cycling slide (2) moves away from the turntable shaft. As the cycling slide (2) moves farther away from the turntable shaft, the tension is increased on the slide return spring (58). The tab on the cycling slide (2) moves clear of the first-record-hold switch (57) allowing it to close.

During the time the cycling slide (2) is moving away from the turntable shaft, the end stud causes the return lever (6) to swing inward until the landing adjustment stud (32A) contacts it. The pressed incline in the cycling slide (2) causes the lift rod (10) to ride down, forcing the pickup arm (19) to lower as the lift rod (10) is pushed down against the height adjustment stud (15).

The pickup arm (19) is connected by the lift rod (10) to the trip lever (32). As the cycling slide (2) moves outward, the top stud on the trip lever (32) is pushed outward causing the pickup arm (19) to move with it. This outward rotation of the trip lever (32) causes the landing adjustment stud (32A) to push the return lever (6), increasing the tension on the return lever spring (5).

When the cycling slide (2) reaches the end of its outward movement, the stop dog (44) engages the ratchet wheel (25). This causes the ratchet wheel (25) and separator shaft to stop. The turntable (37) continues to rotate causing the flattened end of the separator shaft to push the knives out of the spindle. These knives then cause the shelves to be drawn into the spindle. The knives, being on top, separate the bottom record from the stack allowing it to be dropped from the spindle. If the contact bracket (63) is held down, the stop dog (44) does not engage the ratchet wheel (25). When this happens, the ratchet wheel (25) and separator shaft, both, rotate with the turntable (37) and the bottom record is held on the spindle (40).

The cycling slide (2), having reached the outer limit of its travel, starts back toward the turntable shaft. The cycling cam (29) is now with its smaller diameter riding on the rubber roller (46). As this happens, the tension of the slide return spring (58) pulls the slide toward the turntable shaft. When the cycling slide (2) travels inward, the return lever spring (5) holds the return lever (6) against the landing adjustment stud (32A). This causes the trip lever (32) to swing in, and at the same time, causes the pickup

arm (19) to move in toward the record edge. The top stud follows the inward movement of the cycling slide (2) until the landing adjustment stud (32A) engages the curved stop in the return lever (6).

When the return lever (6) stops the landing adjustment stud (32A), the pickup arm (19) is directly below the landing place on the record. As the cycling slide (2) moves farther inward, the lift rod (10) allows the pickup arm (19) to be raised onto the record. The arm is raised from the action of the counterbalance weight (11) and the tension of the counterbalance spring (21).

The cycling slide end-stud holds the return lever (6) and allows the trip lever (32) to follow the travel of the pickup arm (19) on the record. At the end of the inward travel of the cycling slide (2) the tab opens the first-record-hold switch (57). The pickup arm (19) follows the record grooves. When record is completed, movement of the arm causes the trip lever spring (34) to engage the cycling cam tab and start the change cycle.

ELECTROMAGNET ACTION

Pushing the Start-Reject switch (3) to the Start position energizes both the first-record-hold electromagnet (55) and the reject electromagnet (56). The energizing of the reject electromagnet (56) pulls the armature (28) on the cycling cam (29) toward it and causes the change cycle to start. As the change cycle starts and the cycling slide (2) moves outward, the tab on the cycling slide (2) moves clear of the first-record-hold switch (57). This allows the switch to close which completes the first-record-hold electromagnet circuit. This electromagnet holds the contact bracket (63) down in front of the stop dog (44) preventing the stop dog from engaging the ratchet wheel (25) and dropping the first record.

As the cycling slide (2) completes the first cycle the tab engages the first-record-hold switch (57) opening the first-record-hold electromagnet (55) circuit.

When the Start-Reject switch (3) is pushed to Reject, only the reject electromagnet (56) is energized. This starts the change cycle and allows the stop dog (44) to engage the ratchet wheel (25) causing the bottom record to be rejected.

LUBRICATION

The mechanism is lubricated at the factory. Hence, it should not require additional lubrication for a long time. When the mechanism does require lubrication (such as after long or hard usage), lubricate as follows:

1. Lubricate all bearing surfaces with Cosmo-Lubric #270.
2. Lubricate cam wheel shaft, idler lever link holes and all sliding surfaces with Dow-Corning Type DC3.
3. Lubricate separator shelves with Cosmo-Lubric #270. Use a very thin film of this lubricant.

NOTE: Failure in cold weather may be caused by use of improper lubricants.

ADJUSTMENTS

Manual Tripping

1. The locking screws (49) should be loosened and the slide bracket (50) should be moved so that it is perpendicular to the cycling slide (2).
2. Move the slide bracket (50) (keeping it perpendicular with the cycling slide) until the rubber roller (46) clears the cutaway portion of the cycling cam (29) by .060 to .078 inches. Tighten locking screws (49) to hold the slide bracket in place.
3. Move the cycling cam (29) slightly clockwise until the knurled edge contacts the rubber roller (46). The screw (54) holding the reject electromagnet (56) in position should be loosened and the reject electromagnet (56) positioned so that the armature (28) on the cycling cam (29) just clears the reject electromagnet (56) when the cycling cam (29) rotates through its cycle. The screw should then be tightened to hold the reject electromagnet (56) in place.

Automatic Tripping

1. Move the cycling cam (29) until the cutout portion clears the rubber roller (46).
2. The tripping adjustment stud (33) should then be turned until the trip spring (34) engages the tab on the cycling cam when the stylus is 1 9/32 inches from the side of the record spindle.

Pickup Arm Landing

If the pickup arm has not been removed, the adjustment is made by turning the landing adjustment stud (32A). Turning this stud allows 3/16 inch pickup arm landing variation.

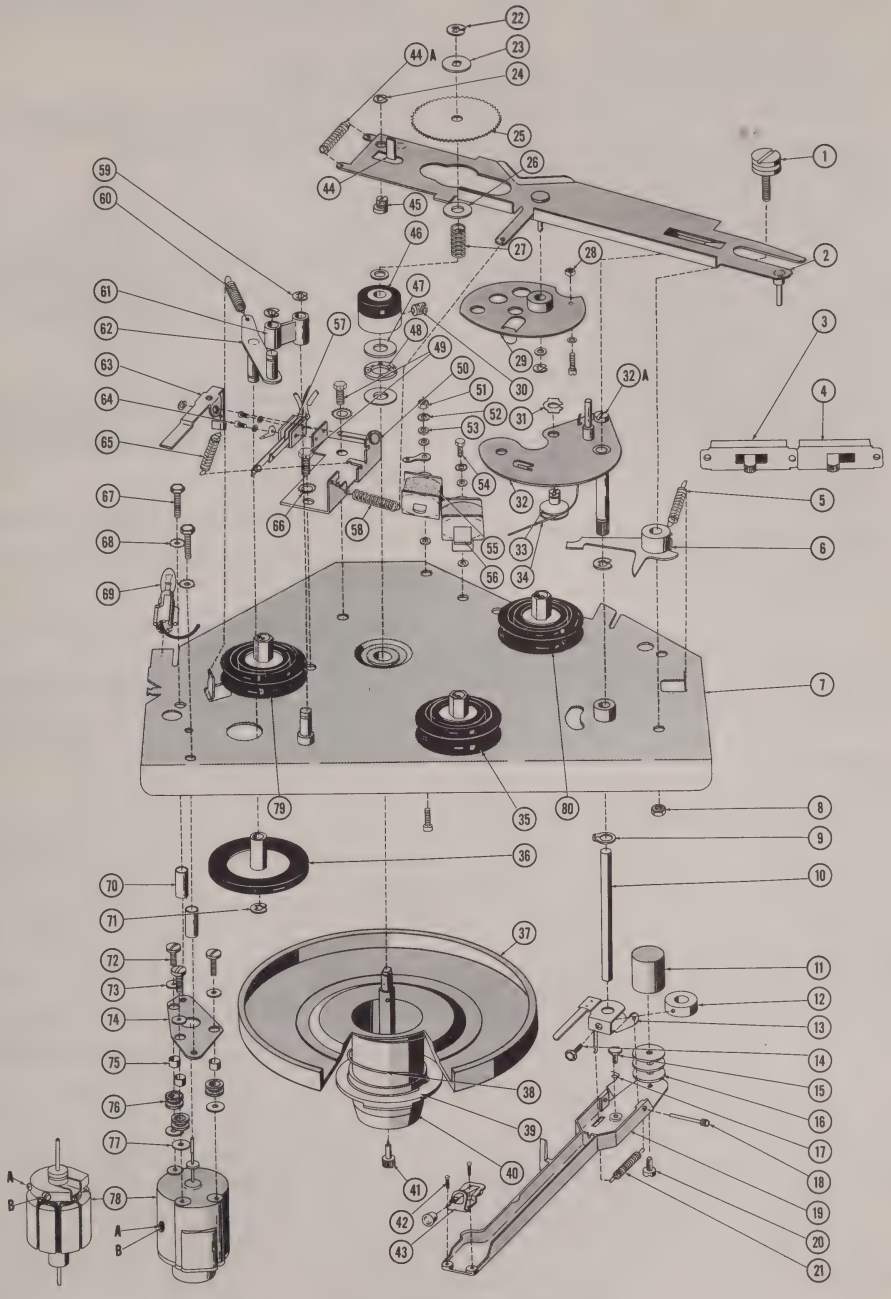


FIG. 3 EXPLODED VIEW OF MECHANISM

If the pickup arm has been removed, adjustments are as follows:

1. Place the mechanism out of cycle and loosen the pickup arm clamp screw (14).
2. The trip lever (32) is then moved causing the landing adjustment stud (32A) to push the return lever (6) against the tab on the motorboard (7).
3. The pickup arm should be moved so that the stylus is 3 3/4 inches from the side of the record spindle. The pickup arm clamp screw (14) should then be tightened to prevent slippage of the collar (12) on the shaft.
4. Push a record up onto the record spindle (40). Hold the contact bracket (63) down and rotate the turntable by hand until the stylus is just ready to land on the record.
5. The pickup arm clamp screw (14) should then be loosened and the pickup arm moved so that the stylus will land between the outer edge and the starting groove of the record. Allow the mechanism to go through several complete cycles then securely tighten the pickup arm clamp screw (14).
6. Final adjustment may now be made by adjusting the landing adjustment stud (32A).

Pickup Arm Height

The pickup arm height is adjusted by turning the height adjustment stud (15). This screw should be adjusted so that during the change cycle, the tip of the stylus is 1 3/8 inches below the surface of the turntable (37).

First-Record-Hold

Adjust the gap between the contact bracket (63) and the first-record-hold electromagnet (55) to a distance of .025 inch by moving the stop ear which is on the slide bracket (50). After adjustment, the contact bracket (63) should not drag on the ratchet wheel (25).

Stylus Pressure

There is no provision for field adjustment of the stylus pressure. The counterbalance is selected to give the desired stylus pressure.

Record Drop

Push a stack of records up onto the record spindle. Start the change cycle and manually rotate the turntable. The record dropping adjustment stud (45) should be adjusted so that the record drops when the pickup arm (19) reaches the limit of its outward swing.

Pickup Arm Stop

The stop bracket (63) on the pickup arm swivel should be adjusted to where the tip of the stylus is 1/4 inch below the surface of the turntable.

Motor Speed

1. The screw (B) should be tightened one-half turn.
2. Eight volts should be applied to the motor lamp circuit.
3. Adjust screw (A) until a turntable speed of 43 rpm is obtained.
4. Motor-lamp circuit voltage should then be increased to 14 volts.
5. Adjust screw (B) until a turntable speed of 46 rpm is obtained.

TROUBLE CHART

Trouble	Cause	Remedy
Pickup arm lands in wrong place.	1. Pickup arm dislocated during shipment or handling. 2. Pickup arm return lever (6) binding in pivot. 3. Pickup arm return lever spring (5) weak or broken. 4. Loose pickup arm clamp screw (14).	1. See "Pickup Arm Landing Adjustment". 2. Clear pickup arm return lever (6). 3. Replace pickup arm return lever spring (5). 4. Tighten pickup arm clamp screw (14).
Poor or no reproduction.	1. Warped record. 2. Defective stylus. 3. Pickup leads broken or shorted. 4. Dirty stylus holder. 5. Stylus holder off center.	1. Discard the record. 2. Replace the stylus. 3. Repair pickup leads. 4. Clean stylus holder. 5. Straighten stylus holder.
Does not reject.	1. Dirty or broken Start-Reject switch (3). 2. Open coil of Record-Reject electromagnet (56). 3. Grease or oil on rubber roller (46). 4. Voltage low, will not energize reject electromagnet (56).	1. Clean or replace Start-Reject switch (3). 2. Replace Record-Reject electromagnet (56). 3. Clean rubber roller (46) with alcohol. 4. Check input voltage.

TROUBLE CHART (CON'T.)

Trouble	Cause	Remedy
	5. Record-Reject electromagnet (56) or slide bracket (50) improperly adjusted.	5. Adjust Record-Reject electromagnet (56) or slide bracket (50).
Improper tracking.	1. Dirty stylus. 2. Weak or broken counterbalance spring (21).	1. Clean the stylus. 2. Replace the counterbalance spring (21).
Premature drop of first record.	1. Open coil of first-record-hold electromagnet (55). 2. Stop ear on slide bracket (50) bent.	1. Replace first-record-hold electromagnet (55). 2. Straighten stop ear.
Records do not separate.	1. Defective record spindle (40). 2. Weak or broken stop dog spring (44A). 3. Stop dog (44) binding in pivot.	1. Repair or replace record spindle (40). 2. Replace stop dog spring (44A). 3. Free stop dog (44).
When record drops it strikes pickup arm.	1. Pickup arm (19) adjustment incorrect. 2. Improper adjustment of record dropping adjustment stud (45).	1. Adjust pickup arm (19). 2. Adjust record dropping adjustment stud (45).
Wow	1. Dirty or defective idler wheel (36). 2. Worn turntable bearing race (48). 3. Weak or broken idler spring (60). 4. Binding idler link (61).	1. Clean or replace idler wheel (36). 2. Replace turntable bearing race (48). 3. Replace idler spring (60). 4. Clear idler link (61).
Does not trip automatically.	1. Improperly adjusted trip wire (34). 2. Binding trip lever shaft (32). 3. Tab on cycling cam (29) bent. 4. Binding cycling cam shaft.	1. Adjust trip wire (34). 2. Clear trip lever shaft (32). 3. Straighten tab on cycling cam (29). 4. Clear cycling cam shaft.
Trips prematurely.	1. Cycling cam (29) and rubber roller (46) too close together.	1. Adjust distance between cycling cam (29) and rubber roller (46).
Trips continually.	1. Defective Start-Reject switch (3). 2. Cycling cam (29) and rubber roller (46) too close together. 3. Bent cycling cam shaft.	1. Replace Start-Reject switch (3). 2. Adjust distance between cycling cam (29) and rubber roller (46). 3. Straighten cycling cam shaft.
Imcomplete cycling.	1. Bent cycling cam (29). 2. Grease or oil on rubber roller (46). 3. Weak or broken slide return spring (58).	1. Repair or replace cycling cam (29). 2. Clean the rubber roller (46). 3. Replace slide return spring (58).
Motor does not operate.	1. Motor overload lamp (69) burned out.	1. Replace motor overload lamp (69) with a #44 lamp only.

MECHANICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	108391	Slide Retaining Stud	3	108621	Start-Reject Switch
2	108384	Cycling Slide	4	102686	Off-On Switch

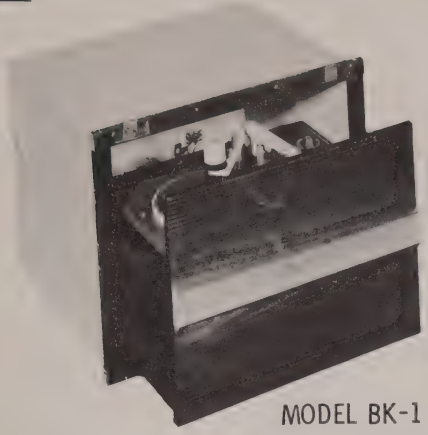
MECHANICAL PARTS LIST (CON'T.)

Ref. No.	Part No.	Description
5	108670	Return Lever Spring
6	108390	Return Lever
7	108355	Motorboard
8	97179	Nut
9	101501	Ring
10	108389	Lift Rod
11	108357	Counterbalance Weight
12	108359	Pickup Arm Collar
13	108620	Pickup Arm Swivel
14		Clamp Screw
15	108372	Height Adjustment Stud
16		Washer - 3/4" O.D. x .196" I.D. x 1/16" thk.
17	108371	Spring
18	108368	Swivel Mounting Shaft
19	108356	Pickup Arm Shell
20		Screw
21	108370	Counterbalance Spring
22	77586	"C" Washer
23	108402	Clutch Plate
24	74431	Spring Washer
25	108401	Ratchet Wheel
26		Washer - .56" O.D. x .190" I.D. x .030" thk.
27	108822	Ratchet Wheel Thrust Spring
28	108542	Cycling Cam Armature
29	108385	Cycling Cam
30	75751	Set Screw
31	108263	Spring Washer
32	108386	Trip Lever
32A	108388	Landing Adjustment Stud
33	108557	Trip Adjustment Stud
34	108541	Trip Spring
35	108821	Bellows
36	108394	Idler Wheel
37	108364	Turntable and Spindle Assembly
38	108823	Disc Thrust Spring
39	108367	Disc
40	108376	Spindle Nose Cap
41	108377	Manual Separator Knob
42		Screw
43	108556	Pickup Holder
44		Stop Dog
44A	75765	Stop Dog Tension Spring
45	75766	Record Dropping Adjustment Stud
46	108400	Rubber Roller
47	74080	Washer
48	72349	Bearing
49		Screw
50	108392	Slide Bracket
51	95864	Nut
52		Lockwasher
53		Washer
54		Screw
55	108398	First-Record-Hold Electromagnet
56	108399	Record Reject Electromagnet
57	108396	First-Record-Hold Switch
58	108405	Cycling Slide Return Spring
59	78652	"C" Washer
60	108406	Idler Wheel Tension Spring
61	78517	Idler Lever Link
62	108393	Idler Lever
63	108395	Contact Bracket
64		Screw
65	75886	Contact Bracket Return Spring
66		Lockwasher
67		Screw
68		Lockwasher
69		#44 Pilot Lamp
70		Spacer
71	100173	"C" Washer
72		Screw
73	108382	Washer
74	108380	Motor Mounting Plate
75	108383	Spacer
76	71851	Rubber Grommet
77	108382	Washer
78	108379	Motor
79	108820	Bellows
80	108819	Bellows

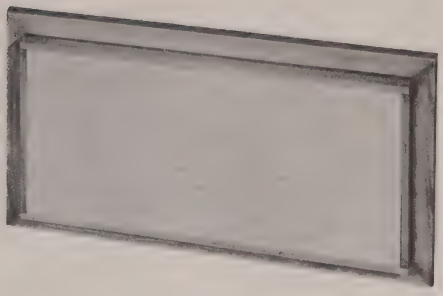
PHOTOFACT® Folder

RCA VICTOR MODELS BK-1, DK-109, DK-110, DK-111 (Ch. RS-187)

RCA VICTOR MODELS BK-1, DK-109, DK-110, DK-111 (Ch. RS-187)



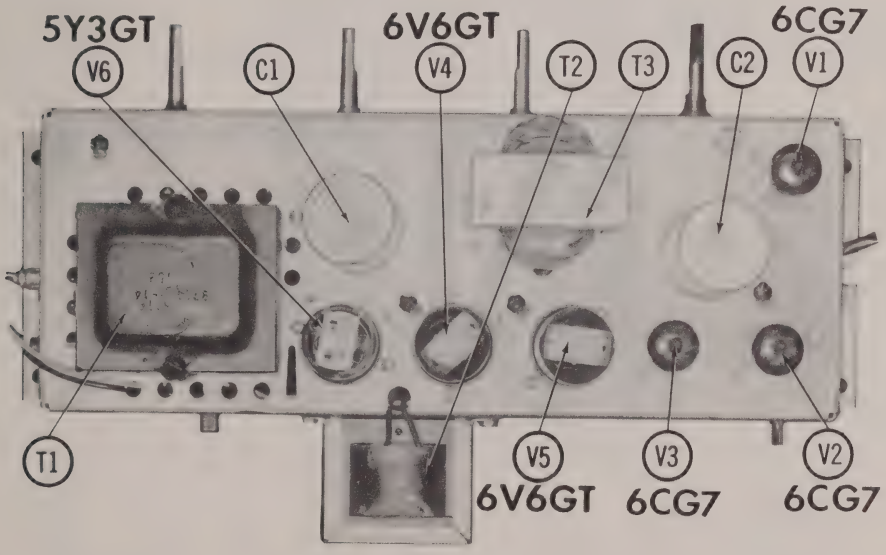
MODEL BK-1



MODEL DK-109

TRADE NAME	RCA Victor Models BK-1 (Ch. RS-187) DK-109, DK-110, DK-111 (Remote Speakers)
MANUFACTURER	RCA Victor Radio & "Victrola" Div., Radio Corp. of America, Camden 8, N. J.
TYPE SET	AC Operated 6 Tube Stereo Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 82 Watts, .76 Amp. @117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER RP-211-4 — SEE SIMILAR RCA RP-211 SERIES — PHOTOFACT SET 475 FOLDER 7



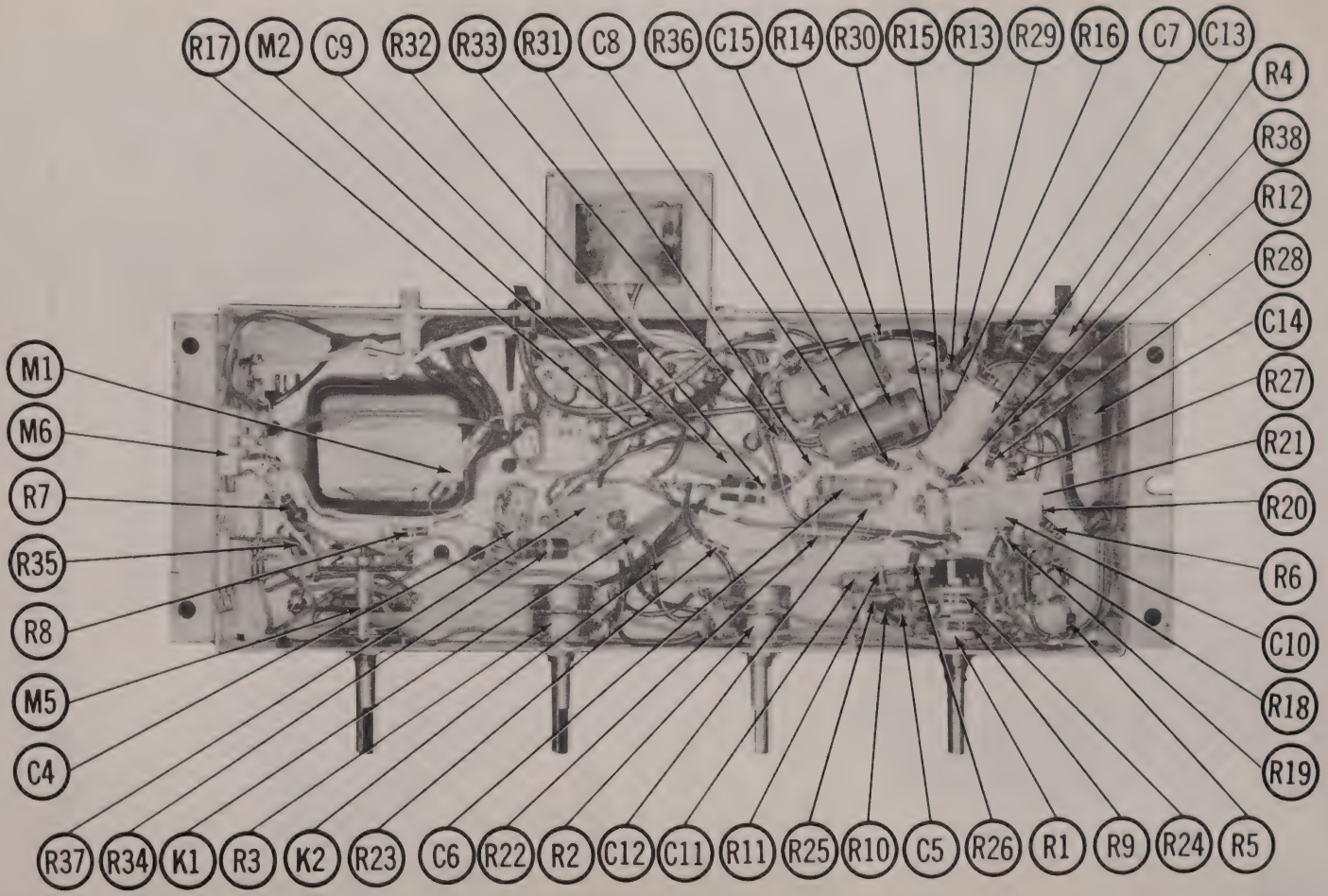
RCA VICTOR MODELS BK-1, DK-109, DK-110, DK-111 (Ch. RS-187)

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

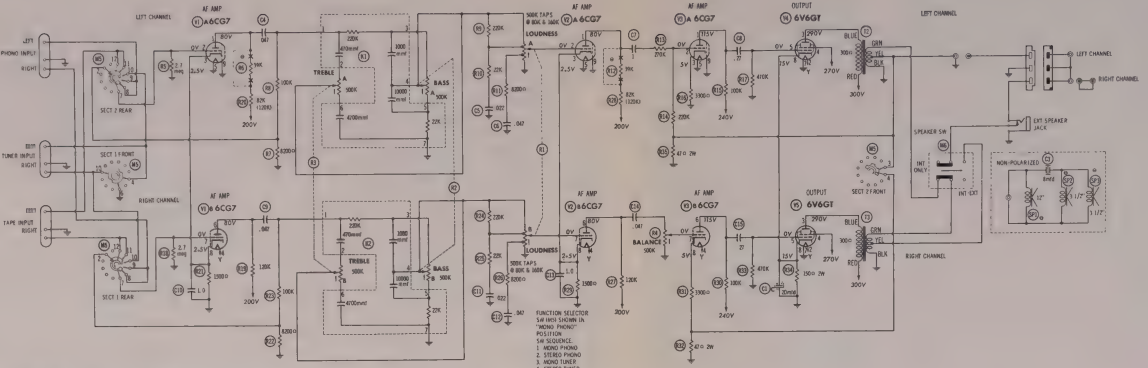
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

KT155

SET 508 FOLDER 18



CHASSIS BOTTOM VIEW



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6CG7	†.137K	2.7meg	1500Ω	.1Ω	0Ω	†.137K	2.7meg	1500Ω	0Ω
V2	6CG7	†.137K	0Ω	1500Ω	.1Ω	0Ω	†.137K	0Ω	1500Ω	0Ω
V3	6L6GT	†.107K	225K	390Ω	.1Ω	0Ω	†.107K	0Ω	1900Ω	0Ω
V4	6V6GT	NC	1Ω	†300Ω	†2200Ω	470K	NC	0Ω	150Ω	
V5	6V6GT	TP	1Ω	†300Ω	†2200Ω	470K	NC	0Ω	150Ω	
V6	5Y3GT	NC	1	NC	130Ω	NC	130Ω	NC	1	

1 THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 8 OF V6.
NC NO CONNECTION

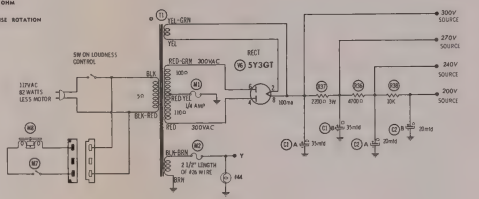
TP TIE POINT

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC CON. RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings
5. Nominal tolerance of component values makes possible a variation of ±10% in voltage and resistance readings
6. All controls at minimum, proper output load connected



A PHOTOFACT STANDARD NOTATION SCHEMATIC
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RCA VICTOR MODELS BK-1, DK-109, DK-110, DK-111 (Ch. RS-187)

PARTS LIST AND DESCRIPTIONS

TUBES

◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆

ITEM No.	USE	TYPE
V1	Left Channel Preamp. - Right Channel Preamp.	6CG7
V2	Left Channel AF Amp. - Right Channel AF Amp.	6CG7
V3	Left Channel AF Amp. - Right Channel AF Amp.	6CG7
V4	Left Channel Output	6V6GT
V5	Right Channel Output	6V6GT
V6	Rectifier	5Y3GT

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	RCA VICTOR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲35	400	105765	AFH3-133	C0330	FP346	TMT-3625	TVL-3744	
B	■35	400							
C	▲20	25							
C2A	▲20	400	106210	AFH2-69	B0500	FP282.5	TMD-2760	TVL-2935	
B	▲20	400							
C3	8	10NP	100509	PRS7315	BBR8-150	TCN108		TVANS-1112 *	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	.047 400V		P288N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C5	.022 200V		P288N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	2TM-S22
C6	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C7	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C8	.27 400V		P488N-27		CUB4P25	4DP-5-274	GEM-6027	4TM-P25
C9	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C10	1.0 50V		P288N-1.0		CUB2W1	1DP-5-105	GEM-21	2TM-M1
C11	.022 200V		P288N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	2TM-S22
C12	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C13	1.0 50V		P288N-1.0		CUB2W1	1DP-5-105	GEM-21	2TM-M1
C14	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C15	.27 400V		P488N-27		CUB4P25	4DP-5-274	GEM-6027	4TM-P25

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA RCA VICTOR PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K *	1/2	106537	TPL-103				Loudness, Left Channel
B	500K *	1/2		Not Req.				Loudness, Right Channel
C	Switch			Not Req.				Push-Pull, Off-On
R2A	500K	1/2	106214	B-60	AD47-500K-Z		FA55A	Bass, Left Channel
B	500K	1/2		SR-60	Not Req.		RU55A	Bass, Right Channel
C	Shaft			Not Req.	FS-3		CS3500	
R3A	500K	1/2	106213	B-59	AD47-500K-S		FA55L	Treble, Left Channel
B	500K	1/2		SR-59	Not Req.		RU55L	Treble, Right Channel
C	Shaft			Not Req.	FS-3		CS3500	
R4A	500K	1/2	106212	TT-60	B47-500K-Z	B13	TA55A	Balance
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	

* Taps @ 80K & 160K.

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R5	2.7meg	
R6	39K	
R7	8200Ω	
R8	100K	
R9	220K	
R10	22K	
R11	8200Ω	
R12	39K	Note 1
R13	270K	
R14	220K	
R15	100K	
R16	3300Ω	

ITEM No.	RATING	REMARKS
R17	470K	
R18	2.7meg	
R19	120K	
R20	82K	(120K) *
R21	1500Ω	
R22	8200Ω	
R23	100K	
R24	220K	
R25	22K	
R26	8200Ω	
R27	120K	
R28	82K	(120K) *

ITEM No.	RATING	REMARKS
R29	1500Ω	
R30	100K	
R31	3300Ω	
R32	47Ω 2W	
R33	470K	
R34	150Ω 2W	
R35	47Ω 2W	
R36	4700Ω	
R37	2200Ω 3W	IRC#PW5-2.2KΩ
R38	10K	

Note 1. Not used in some versions.
* Alternate Value.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RCA VICTOR PART No.	REPLACEMENT DATA
K1	Tone Comp.	470mmf, 1000mmf, 4700mmf, 10000mmf, 22K, 220K	106457	Centralab PC-378
K2	Tone Comp.	470mmf, 1000mmf, 4700mmf, 10000mmf, 22K, 220K	106457	Centralab PC-378

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA: RCA VICTOR PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
	PRI.	SEC. 1	SEC. 2						
T1	117V @ .76A	600 VCT @ .100A	5V @ 2A	106454①					
	SEC. 3	SEC. 4	SEC. 5						
	6.3V @ 2.4A								

① Alternate Part #106458.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA: RCA VICTOR PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
	PRI.	SEC.						
T2	6800Ω	16Ω Tap @ 8Ω	106211	A-2902①	A-3870	24S55	S-57Z	① Drill new mounting holes.
T3	6800Ω	16Ω Tap @ 8Ω	106211	A-2902①	A-3870	24S55	S-57Z	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA: RCA VICTOR PART No.	QUAM PART No.	NOTES
	SIZE	FIELD	V. C. IMP.			
SP1	12"	PM	6-8Ω	108661 *	12A6AZ9	* Used in Models DK-109, DK-111
SP2	3½"	PM	3-4Ω	105395 *‡	3A15TZ4.9	‡ Used in Model DK-110
SP3	3½"	PM	3-4Ω	105395 *‡	3A15TZ4.9	
	8"	PM	3-4Ω	78597 ‡	8A21	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: RCA VICTOR PART No. FUSE	RCA VICTOR PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1	3AG	1/4A 250V P/T	108905		318.250 (3AG 1/4A 250V P/T)		GJV 1/4	
M2	2½" length AWG #26 Copper Wire.							

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA: RCA VICTOR PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE
M3	106770A	13TB		26S	S1-1 S3-3			8TA4-S	N-8TA-S

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA: RCA VICTOR PART No.	JENSEN PART No.	REMARKS
M4	(Part of M3)	M-76 † or M-76D ♦ & M-76X † or M-76XD ♦	† Jewel ♦ Diamond

MISCELLANEOUS

ITEM No.	PART NAME	RCA VICTOR PART No.	NOTES
M5	Switch	106209	Function (Rotary Wafer Type)
M6	Switch	46760	Speaker Selector (DPDT Slide Type)
M7	Switch	108457	Changer Off-On (Part of Changer)
M8	Motor		Turntable Drive (Part of Changer)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	106666	Volume
Knob	104127	Bass, Treble
Knob	106446	Function Selector

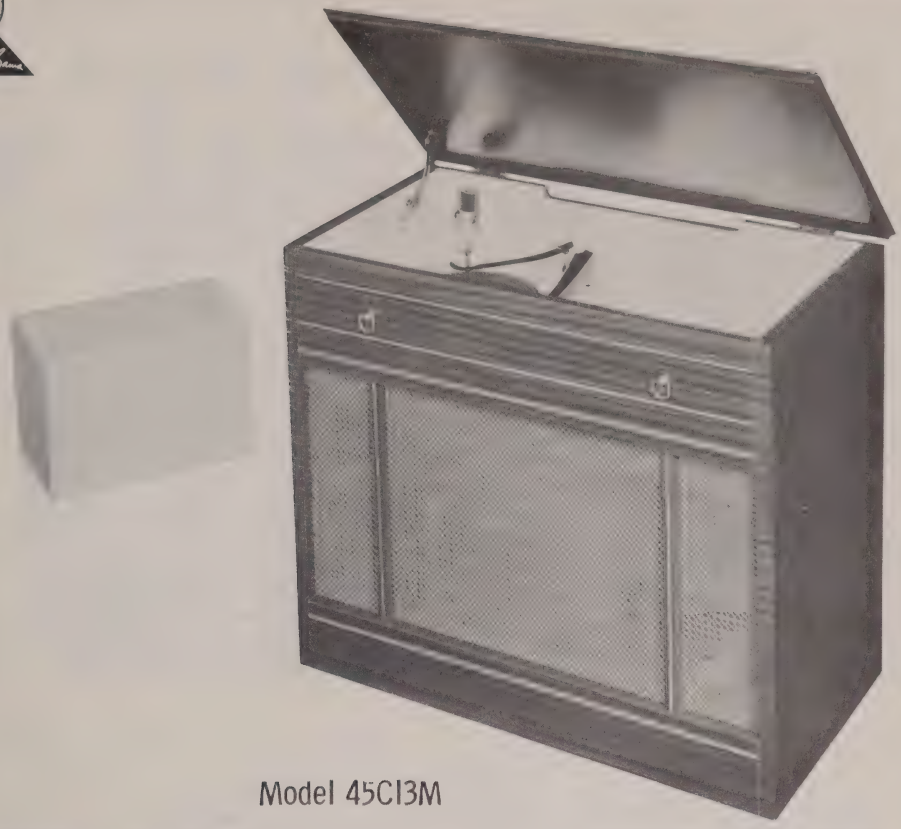
WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

PHOTOFACT® Folder

SYLVANIA MODELS 45C13, 45C14 SERIES (Ch. 1-647-1)

SYLVANIA MODELS 45C13, 45C14 SERIES (Ch. 1-647-1)



Model 45C13M

SYLVANIA MODELS 45C13, 45C14 SERIES (Ch. 1-647-1)

TRADE NAME	Sylvania Models 45C13 Series, 45C14 Series (Ch. 1-647-1)
MANUFACTURER	Sylvania Home Electronics, Div. of Sylvania Electric Products, Inc., 700 Ellicott St., Batavia, N. Y.
TYPE SET	AC Operated 5 Tube Stereo Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 75 Watts, .7 Amp. @ 117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER — SEE SIMILAR V-M 1201 — PHOTOFACT SET 436 FOLDER 18 OR RECORD CHANGER MANUAL RC-12

SET 508 FOLDER 19

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

TUBES

◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Left Channel AF Amp.	7025	V4	Right Channel Output	6BQ5
V2	Left Channel Output	6BQ5	V5	Rectifier	5Y3GT
V3	Right Channel AF Amp.	7025			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA SYLVANIA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C|A	■80	450	161-4030	AFH3-46	C0370	FP378	TMT-3763	TVL-3793	
B	▲40	450		PRS1320	BR505	TC32	TD-10-50	TVA-1304	
C	▲20	450							
D	10	50							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C3	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C4	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C5	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C6	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C7	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C8	2mfd 50V		P1589Z-2.0		MP2W2			
C9	2mfd 50V		P1589Z-2.0		MP2W2			

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA SYLVANIA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2.2meg	½	153-0204					Loudness, Right Channel
	650K Tap							
B	2.2meg	½						Stereo, Left Channel
	650K Tap							
R2A	1meg	½	153-0203	AB-70	AD47-1meg-Z			Treble, Right Channel
B	1meg			SR-70	Not Req.			Treble, Left Channel
C	Shaft			AK-10	FS-5			
R3A	1meg	½	153-0203	AB-70	AD47-1meg-Z			Bass, Right Channel
B	1meg			SR-70	Not Req.			Bass, Left Channel
C	Shaft			AK-10	FS-5			
R4	200Ω	2(WW)	159-0010				FL200P	Hum Balance

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

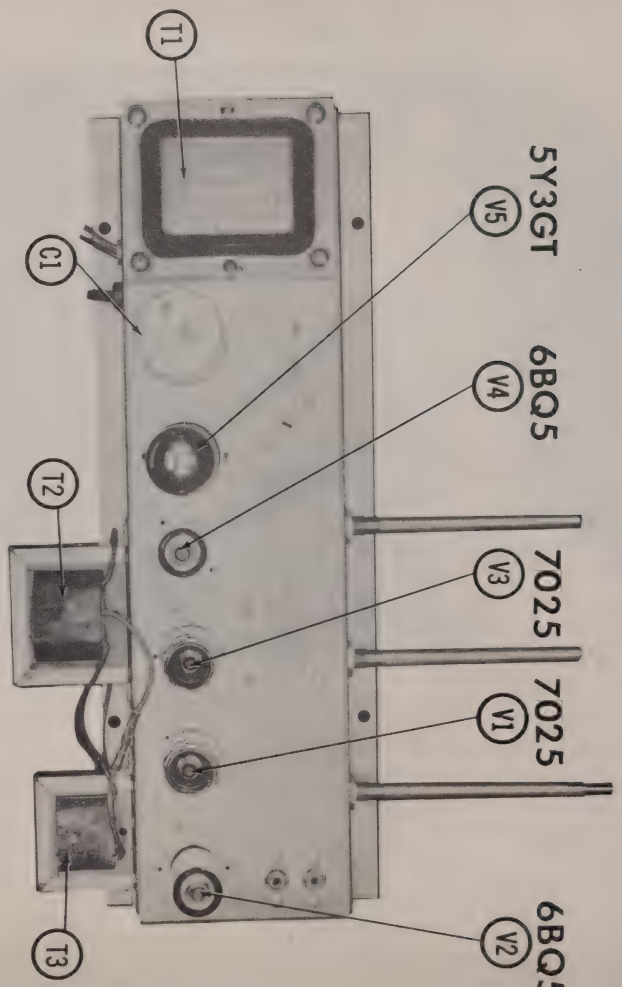
ITEM No.	RATING	REMARKS
R5	220K	
R6	1000Ω	
R7	4700Ω	Note 1
R8	6.8meg	
R9	220K	
R10	1000Ω	
R11	33K	

ITEM No.	RATING	REMARKS
R12	470K	
R13	82Ω 5W	IRC#PW5-82Ω
R14	220K	
R15	1000Ω	
R16	4700Ω	Note 1
R17	6.8meg	
R18	220K	

ITEM No.	RATING	REMARKS
R19	1000Ω	
R20	33K	
R21	470K	
R22	33K	
R23	1500Ω 1W	
R24	220K	Note 1
R25	220K	Note 1

Note 1. Not used in some versions.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	SYLVANIA PART No.	REPLACEMENT DATA
K1	Tone Comp.	50mmf, 5000mmf, 33K	190-0051	
K2	Rumble Filter	10000mmf, 10000mmf, 10000mmf, 354K, 1.4meg, 1.4meg	190-0052	
K3	Audio Coupling	330mmf, 2200mmf, 2200mmf, 10000mmf, 33K, 56K, 150K	190-0053	
K4	Tone Comp.	50mmf, 5000mmf, 33K	190-0051	
K5	Rumble Filter	10000mmf, 10000mmf, 10000mmf, 354K, 1.4meg, 1.4meg	190-0052	
K6	Audio Coupling	330mmf, 2200mmf, 2200mmf, 10000mmf, 33K, 56K, 150K	190-0053	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	SYLVANIA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V @ .7A	600 VCT @ .100A	5V @ 2A	141-0068					
	SEC. 3	SEC. 4	SEC. 5						
	6.3V @ 2.1A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	SYLVANIA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	6000Ω CT	6-8Ω CT	143-0083					
T3	3400Ω	3-4Ω	143-0082					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	SYLVANIA PART No.	QUAM PART No.	
SP1	6"	PM	3-4Ω	539-0611 *	6A21	* Used in Model 45C13
SP2	3"	PM	6-8Ω	539-0301 *‡	3A15TZ6.8 ♦	‡ Used in Model 45C14
SP3	8"	PM	3-4Ω	539-0813 *	8A21	♦ Use Wood Screws to Mount
SP4	3"	PM	6-8Ω	539-0301 *‡	3A15TZ6.8 ♦	
	8"	PM	3-4Ω	539-0810 ‡	8A21	
	10"	PM	3-4Ω	539-1011 ‡		

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA								
	SYLVANIA PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.		SONOTONE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE
M1		13T		13		A-44X		10T2-S	

MISCELLANEOUS

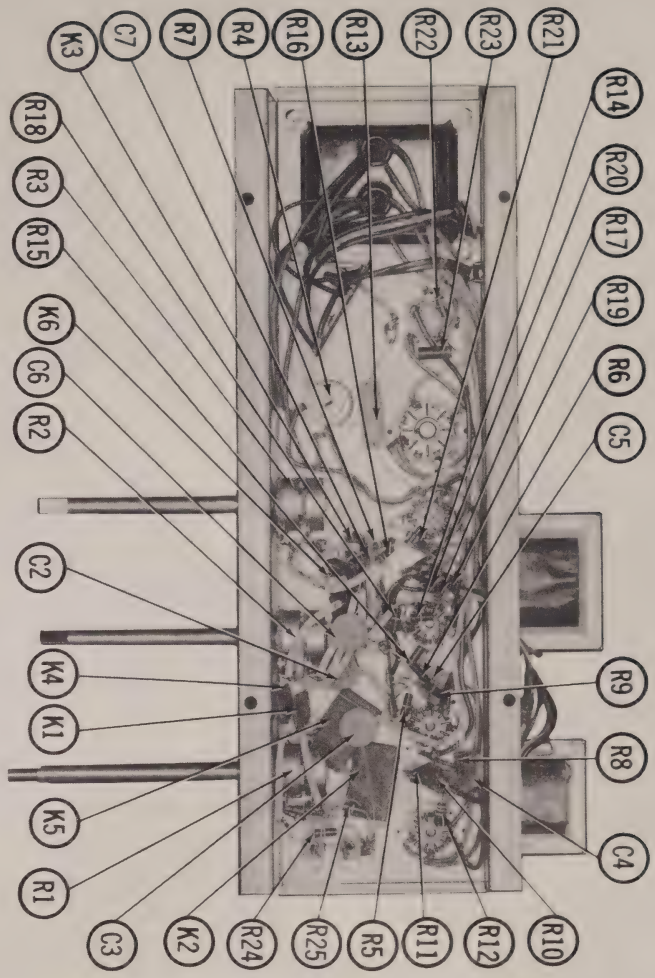
ITEM No.	PART NAME	SYLVANIA PART No.	NOTES
M2	Switch		Changer Off-On (Part of Changer)
M3	Motor		Turntable Drive (Part of Changer)

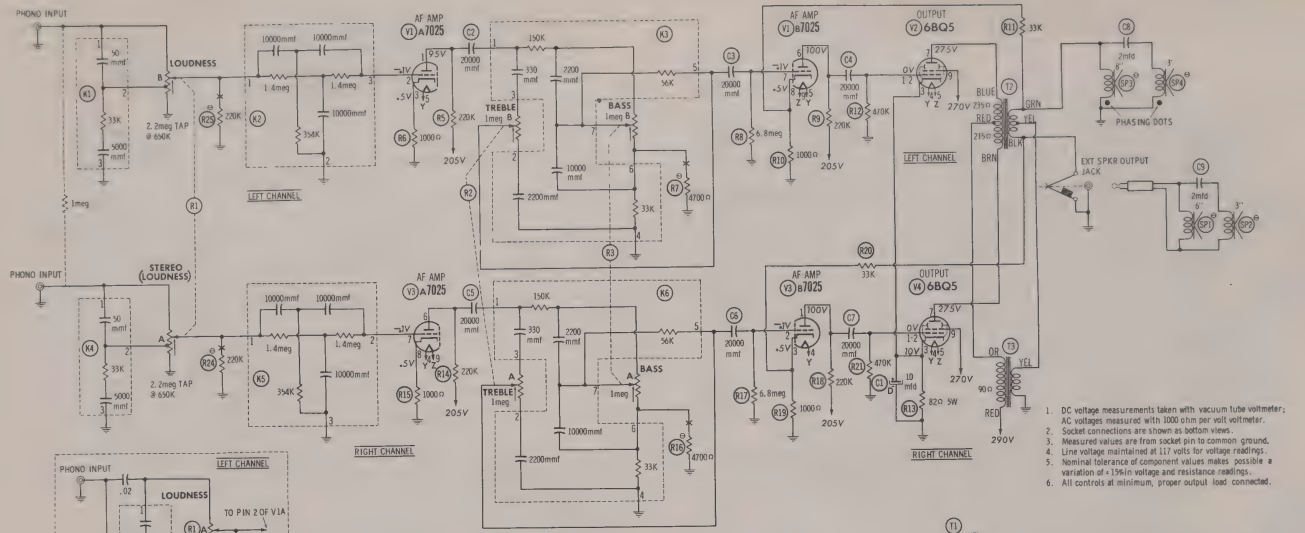
CABINETS & CABINET PARTS

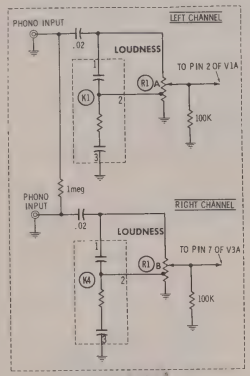
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

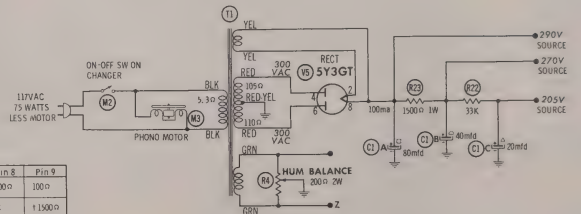
NAME	PART NO.	DESCRIPTION
Knob	740-0307	Loudness, Outer
Knob	740-0305	Loudness, Inner
Knob	740-0306	Bass, Treble

CHASSIS—BOTTOM VIEW









RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	7025	†250K	3meg	1000Ω	100Ω	100Ω	†250K	6.8meg	1000Ω	100Ω
V2	6BQ5	NC	470K	82Ω	100Ω	100Ω	NC	†315Ω	NC	†1500Ω
V3	7025	†250K	6.8meg	1000Ω	100Ω	100Ω	†250K	3meg	1000Ω	100Ω
V4	6BQ5	470K	NC	82Ω	100Ω	100Ω	NC	†305Ω	NC	†1500Ω
V5	5Y3GT	NC	¶	NC	105Ω	NC	110Ω	NC	¶	

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 8 OF V5. NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

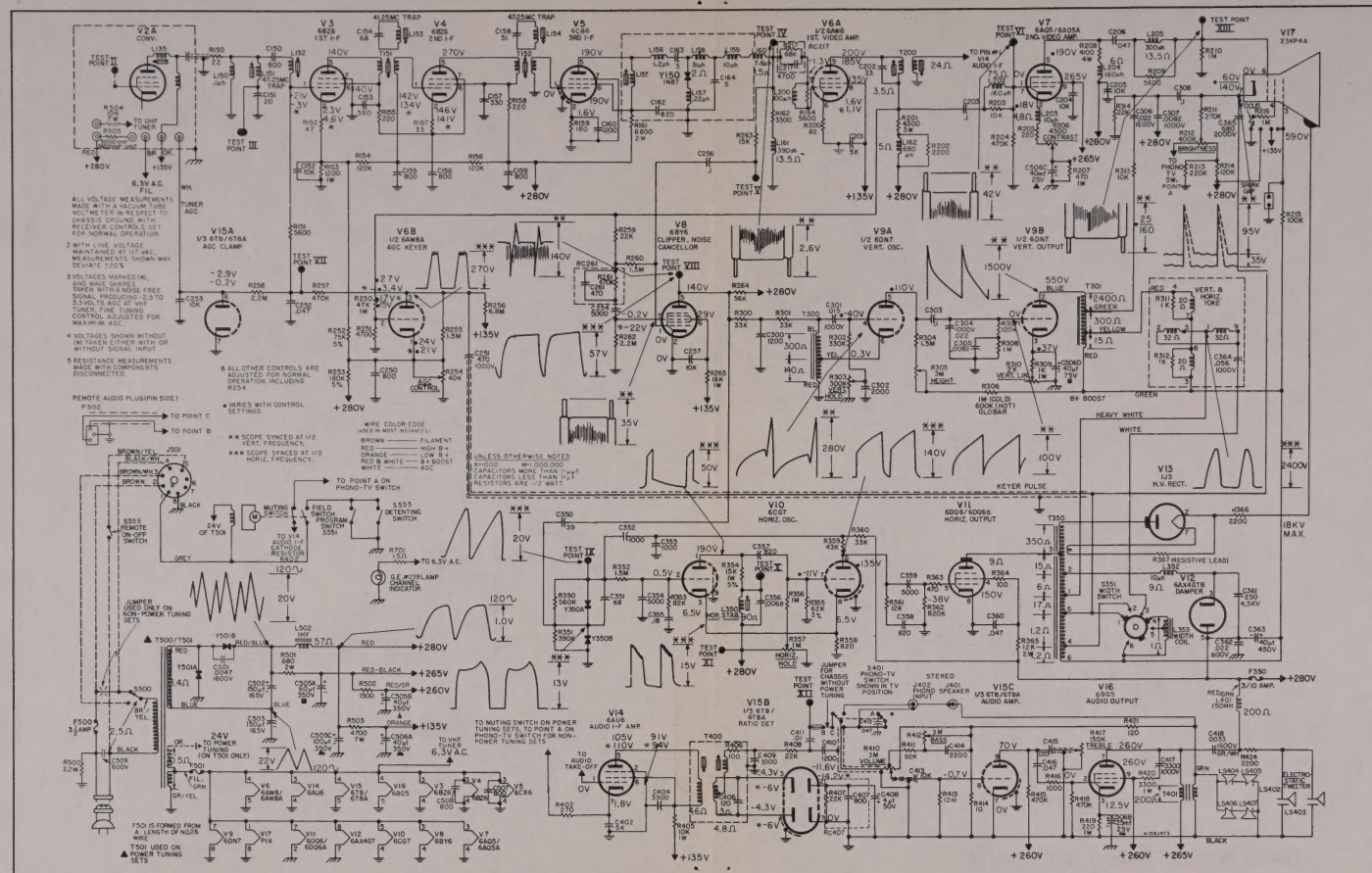
⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1960

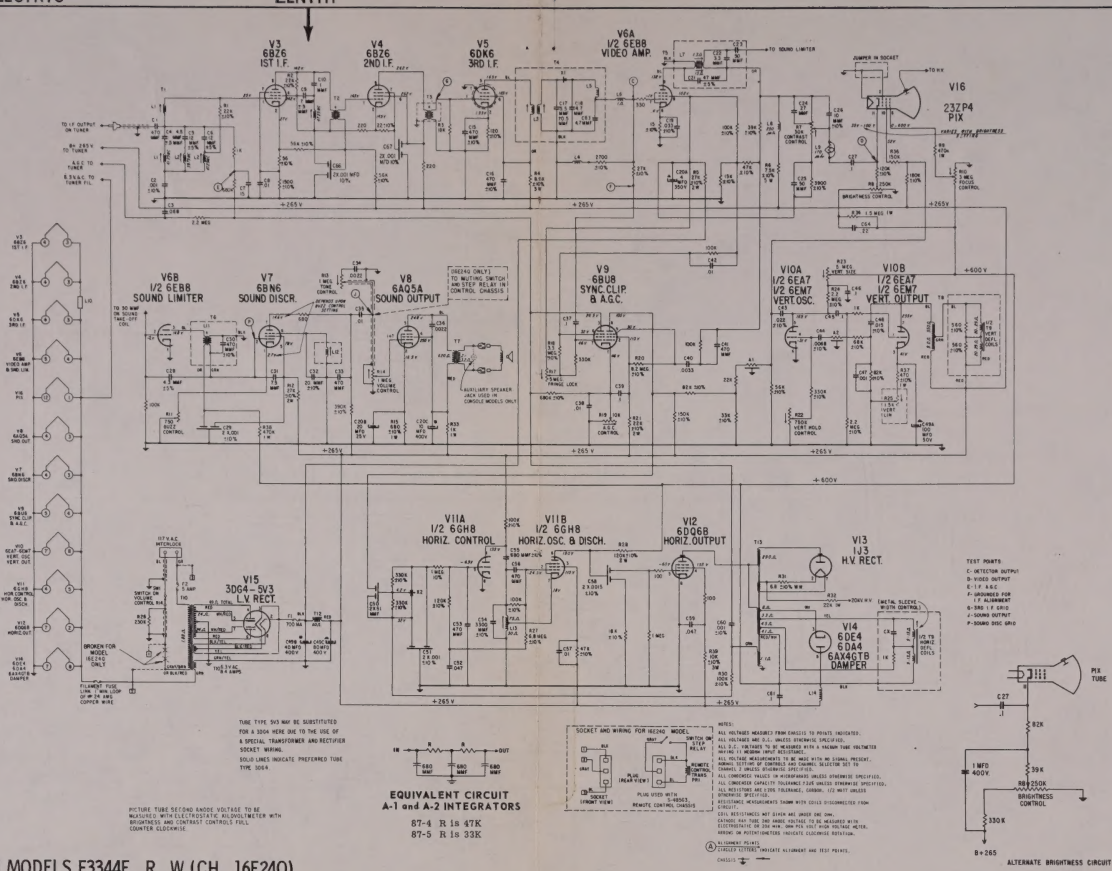
SYLVANIA MODELS 45C13, 45C14 SERIES (Ch. 1-647-1)



GENERAL ELECTRIC MODELS M870VWD, M871VWD, R870VML, R870VWD (CH. U5)

Schematic Diagram Courtesy of General Electric Company

ZENITH


V3 6BZ6 1ST I.F.
V4 6BZ6 2ND I.F.
V5 6DK6 3RD I.F.
V6A 1/2 6EB8 VIDEO AMP.
V16 23ZP4 PIX
V6B 1/2 6EB8 SOUND LIMITER
V7 6BN6 SOUND DISCR.
V8 6AQ5A SOUND OUTPUT
V9 6BU8 SYNC. CLIP. & A.G.C.
V10A 1/2 6EA7 1/2 6EM7 VERT. OSC.
V10B 1/2 6EA7 1/2 6EM7 VERT. OUTPUT
V11A 1/2 6GH8 HORIZ. CONTROL
V11B 1/2 6GH8 HORIZ. OSC. & DISCH.
V12 6DQ6B HORIZ. OUTPUT
V13 1J3 H.V. RECT.
V14 6DE4 6DA4 6AX4GTB DAMPER
V15 3DG4-5V3 L.V. RECT.
+265 V
+600 V
EQUIVALENT CIRCUIT A-1 and A-2 INTEGRATORS
87-4 R is 47K
87-5 R is 33K
ZENITH MODELS F3344E, R, W (CH. 16E24Q)

Schematic Diagram Courtesy of Zenith Radio Corporation

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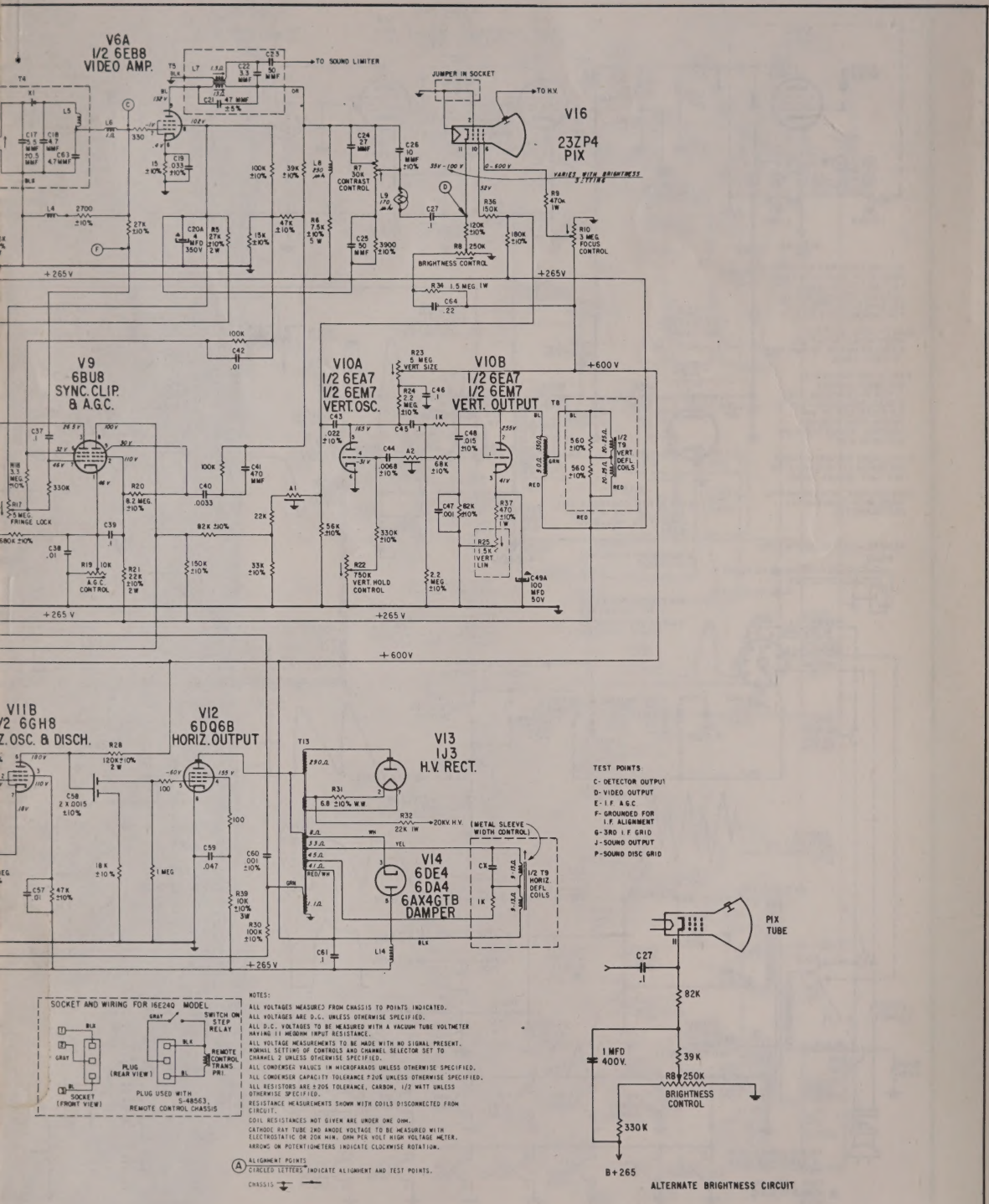

Schematic Diagram Courtesy of Zenith Radio Corporation